EXHIBIT 105

Redacted Version of Document Sought to be Sealed

Full 30(b)(6) Deposition Transcript of Simon Cross, dated May 9, 2022

CONFIDENTIAL

1   UNITED STATES DISTRICT COURT

2   NORTHERN DISTRICT OF CALIFORNIA

3   ---oOo---

4

5   IN RE: FACEBOOK, INC.,

         CONSUMER PRIVACY USER

6   PROFILE LITIGATION

         _____/

7   MDL No. 2843

8   Case No. 18-md-02843-VC-JSC

         This document relates to:

9

         ALL ACTIONS

10   _____/

11

12

13   ***CONFIDENTIAL***

14

15

16   REMOTE VIDEOTAPED DEPOSITION OF

17   SIMON CROSS

18   30(B)(6) DESIGNEE, FACEBOOK, INC.

19   _____

20   MONDAY, MAY 9, 2022

21

22

23

24   REPORTED BY: HOLLY THUMAN, CSR No. 6834, RMR, CRR

25   JOB NUMBER 5210141

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 1                       --o0o--
 2        Remote videotaped deposition of SIMON CROSS, taken
 3     by the Plaintiffs, with the witness located in London,
 4     United Kingdom, commencing at 3:49 P.M. London Daylight
 5     Time, on MONDAY, MAY 9, 2022, before me, HOLLY THUMAN,
 6     CSR, RMR, CRR.
 7                       --o0o--
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21
            DANIEL GARRIE, Special Master
22
23
24
25
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1	MONDAY, MAY 9, 2022	
2	3:49 P.M.	
3	--o0o--	
4	PROCEEDINGS	
5	--o0o--	
6	THE VIDEO OPERATOR: We're on the record.	15:49:21
7	It's 3:49 P.M. London time on May 9, 2022. This is	15:49:22
8	the deposition of Simon Cross, and we're here in	15:49:29
9	the matter of Facebook Consumer Privacy User	15:49:32
10	Profile Litigation.	15:49:35
11	I'm John MacDonell, the videographer, with	15:49:39
12	Veritext.	15:49:42
13	Before the reporter swears the witness,	15:49:43
14	would Counsel please identify themselves, beginning	15:49:45
15	with the noticing party, please.	15:49:48
16	MR. LOESER: Good morning. This is	15:49:51
17	Derek Loeser from Keller Rohrback for Plaintiffs.	15:49:52
18	With me is Adele Daniel and Cari Laufenberg and	15:49:56
19	Emma Wright, also from Keller Rohrback.	15:50:00
20	MR. BLUME: This is Rob Blume from	15:50:03
21	Gibson Dunn on behalf of Facebook. With me is	15:50:05
22	Hannah Regan-Smith, Ian Chen, Josiah Clarke,	15:50:08
23	Matt Buongiorno, and Phuntso Wangdra.	15:50:17
24	MS. WEAVER: And good morning. It's	15:50:23
25	Lesley Weaver from Bleichmar Fonti & Auld, also on	15:50:24

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1	behalf of the plaintiffs.	15:50:30
2	SPECIAL MASTER GARRIE: This is Special	15:50:31
3	Master Garrie, here on behalf of the court.	15:50:31
4	--o0o--	15:50:52
5	SIMON CROSS,	15:50:52
6	_____	15:50:52
7	called as a witness, having been first duly	15:50:52
8	sworn, was examined and testified as follows:	15:50:52
9	---oOo---	15:50:52
10	EXAMINATION BY MR. LOESER	15:50:52
11	BY MR. LOESER:	15:50:52
12	Q. Good morning, Mr. Cross. We met before we	15:50:56
13	went on the record, but I'll introduce myself	15:50:58
14	again. My name is Derek Loeser. I'm from the firm	15:51:00
15	of Keller Rohrback for the plaintiffs in this	15:51:03
16	litigation, and with me is Cari Laufenberg,	15:51:05
17	Adele Daniel, Emma Wright, and Ms. Weaver from her	15:51:07
18	firm as well.	15:51:12
19	Have you had your deposition taken before?	15:51:13
20	A. I -- I've been deposed previously, but I	15:51:17
21	don't think I've been deposed in this particular	15:51:20
22	case before.	15:51:23
23	Q. Okay. And how many times have you been	15:51:24
24	deposed previously?	15:51:26
25	A. Twice.	15:51:28

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1	Q. And do you recall what those matters were	15:51:30
2	in which you were deposed?	15:51:32
3	A. The first was some -- a matter relating to	15:51:34
4	'643, the '643 case, and then the second was a -- I	15:51:38
5	don't recall exactly, but it's the -- the	15:51:45
6	Washington District Attorney's -- Washington D.C.,	15:51:48
7	I think, case against -- against Meta relating to	15:51:52
8	some of the matters --	15:51:56
9	(Reporter requested clarification.)	15:52:04
10	THE WITNESS: -- relating to the, I	15:52:04
11	recall, the Cambridge Analytica matter.	15:52:05
12	BY MR. LOESER:	15:52:08
13	Q. And the '643 matter was against Facebook	15:52:10
14	as well. Is that right?	15:52:13
15	A. That's correct, yes.	15:52:16
16	Q. Okay. Well, you've been through this	15:52:18
17	before, so -- but I'll just remind you of the basic	15:52:20
18	rules, which are really designed to have a clear	15:52:23
19	record.	15:52:26
20	As the Special Master indicated, it's very	15:52:26
21	important that we're not talking at the same time	15:52:28
22	and that we let the court reporter take down what	15:52:30
23	we are saying.	15:52:32
24	If I ask a question and you don't	15:52:33
25	understand the question, could you please ask me to	15:52:35

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1	restate it, and I'll attempt to do that.	15:52:38
2	And when you're answering questions, it's	15:52:42
3	important to answer verbally, so that would be a	15:52:44
4	good example. Shaking your head doesn't make it	15:52:47
5	onto the record, but Yes/No does.	15:52:50
6	So could we make sure that you answer	15:52:52
7	verbally?	15:52:54
8	A. I understand.	15:52:55
9	Q. And if you do answer one of my questions,	15:52:56
10	I will assume you understood the question.	15:52:59
11	Is that a fair assumption?	15:53:01
12	A. That's fine, yes.	15:53:04
13	Q. And over the course of the day, your	15:53:06
14	attorney may object to questions that I ask. And	15:53:10
15	when he does so, unless he instructs you not to	15:53:12
16	answer the question, please wait for him to finish	15:53:15
17	objecting and then go ahead and answer the	15:53:17
18	question.	15:53:19
19	Do you understand that?	15:53:20
20	A. I understand that, yes.	15:53:21
21	Q. And we'll be going for a while, and if at	15:53:23
22	any point you need a break, please just ask for	15:53:26
23	one, and I will accommodate that the best I can.	15:53:28
24	The only caveat is if there is a question	15:53:31
25	that is pending, I will ask you to finish the	15:53:35

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1	question before we take a break.	15:53:37
2	Is that understood?	15:53:40
3	A. Yeah. I understand.	15:53:41
4	Q. And sometimes if we're -- if there's a	15:53:42
5	series of questions and I'm almost through the	15:53:44
6	series, I'll ask if it's okay if we just finish the	15:53:46
7	series before taking a break.	15:53:49
8	Does that sound fair to you?	15:53:51
9	A. That sounds fair.	15:53:53
10	Q. Okay. And as the Special Master	15:53:54
11	indicated, he will be observing today, and so he	15:53:55
12	may come on camera at some point to discuss	15:53:58
13	matters.	15:54:01
14	And it's important there as well that we	15:54:01
15	make sure that he has the time and space to talk	15:54:03
16	and that the record is clear so that we're not	15:54:06
17	talking at the same time.	15:54:08
18	Is that fair?	15:54:09
19	A. Yep. That's fair.	15:54:10
20	Q. Okay. And, Mr. Cross, is there anything	15:54:12
21	that may impact your ability to testify honestly	15:54:14
22	and truthfully today?	15:54:18
23	A. Not that I'm aware of.	15:54:20
24	Q. Okay. No medications or anything of that	15:54:22
25	sort that may interfere with your recall or ability	15:54:24

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1	to testify?	15:54:29
2	A. No. I'm not on any medication, no.	15:54:29
3	Q. And, Mr. Cross, you're located in London?	15:54:32
4	A. That's correct.	15:54:36
5	Q. And is that where you -- and I gather you	15:54:37
6	work for -- for Meta. Right?	15:54:40
7	A. That's correct, yeah. I still work for	15:54:44
8	Meta and live in London.	15:54:46
9	Q. Okay. And so how often do you come to the	15:54:52
10	United States as part of your work?	15:54:54
11	A. In the last two years, not at all, sadly.	15:54:56
12	Before that, I used to come several times a year.	15:55:02
13	Q. Okay. And do you think that going forward	15:55:06
14	you'll be coming stateside more often?	15:55:08
15	A. It's too early to say how much -- how much	15:55:13
16	international we'll be doing. I doubt I'll be	15:55:15
17	doing it as much as we used to.	15:55:18
18	Q. And, sir, if there were a trial in this	15:55:20
19	case, would you be willing to fly across the ocean	15:55:22
20	to attend the trial?	15:55:25
21	A. I have to consult with my counsel on	15:55:29
22	whether or not that would be an appropriate thing	15:55:32
23	to do.	15:55:34
24	Q. Okay. And are you communicating -- and	15:55:35
25	this is -- you know, we're in this new world of	15:55:39

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1	remote depositions, so there are some things we	15:55:41
2	need to sort out for that as well.	15:55:43
3	You are not actively communicating with	15:55:46
4	anybody during the time that I'm asking you these	15:55:47
5	questions, are you?	15:55:50
6	A. No. I am not communicating with anyone.	15:55:51
7	Q. Okay. No texting or messaging or anything	15:55:54
8	of that sort happening?	15:55:57
9	A. No. My phone is screen side down on the	15:55:59
10	desk, and I've cleared my computer.	15:56:02
11	Q. Excellent. Thank you.	15:56:07
12	And, Mr. Cross, did you prepare any notes	15:56:09
13	or other materials to assist you with your	15:56:12
14	testimony today?	15:56:14
15	A. I have a document that I prepared that	15:56:17
16	includes some facts to help me answer -- I think	15:56:20
17	that might come up to help me answer your	15:56:25
18	questions, but that's all I've prepared.	15:56:27
19	Q. And do you have that with you today, sir?	15:56:31
20	A. I do, yes.	15:56:33
21	Q. And do you intend to refer to that during	15:56:35
22	your testimony today?	15:56:39
23	A. If -- if you ask me a question and I can't	15:56:42
24	remember a fact -- a specific fact I may have noted	15:56:44
25	down, then I was planning to refer to that, yes, as	15:56:50

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1	to best answer your questions.	15:56:54
2	MR. LOESER: Thank you.	15:56:57
3	And, Counsel, Mr. Blume, we would like a	15:56:57
4	copy of those notes. And we don't need to go off	15:57:00
5	the record right now to get them, but we would like	15:57:03
6	them as soon as you can get them to us during the	15:57:06
7	deposition, not after.	15:57:08
8	Could you accommodate that request,	15:57:10
9	please?	15:57:13
10	MR. BLUME: Noted.	15:57:14
11	BY MR. LOESER:	15:57:19
12	Q. And since your counsel noted that request	15:57:19
13	but did not actually tell me he was going to do it,	15:57:21
14	this is something I'll bring up again in a little	15:57:24
15	bit just to make sure we actually get those notes	15:57:27
16	during the deposition today. Okay?	15:57:30
17	And, Mr. Cross, you indicated that you	15:57:33
18	currently work for Meta. Is that right?	15:57:35
19	A. That's correct. I work for Meta -- the	15:57:41
20	U.K. arm of Meta. Meta Platforms, Inc., has a U.K.	15:57:44
21	arm.	15:57:50
22	Q. Okay. And over the course of the day,	15:57:51
23	I'll be referring to Facebook frequently. And when	15:57:53
24	I refer to Facebook and ask you a question about	15:57:55
25	Facebook, will you be drawing any distinction	15:57:58

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1	between Meta and Facebook when you answer?	15:58:00
2	A. Whether or not I need to do so may depend	15:58:09
3	on the context of the question. So I can ask for	15:58:11
4	clarification if needed.	15:58:16
5	Q. Okay. That would be helpful. I	15:58:18
6	appreciate that.	15:58:20
7	Mr. Cross, how long have you been employed	15:58:21
8	at -- and I'm going to say Facebook, and I mean	15:58:23
9	both Facebook and Meta.	15:58:27
10	A. I joined the company in September 2010.	15:58:30
11	Q. And I'm not going to take the time during	15:58:38
12	today's deposition to go through your LinkedIn	15:58:40
13	résumé in detail, but I would ask you to describe	15:58:44
14	the major responsibilities that you've had over	15:58:47
15	your time at Facebook and Meta.	15:58:49
16	A. Sure. The first part of my career was	15:58:54
17	working on the Platform Partnerships team, first as	15:58:59
18	a partner engineer, then as a -- for a short time	15:59:04
19	as a developer advocate, and then for a short time	15:59:07
20	as a strategic partnership manager.	15:59:10
21	In -- that was from September 2010 to	15:59:12
22	January 2014.	15:59:18
23	From January 2014 to the end of 2015, I	15:59:21
24	was a product manager on the Facebook Platform	15:59:25
25	team.	15:59:28

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1	From 2016 to late 2018, I worked on the	15:59:31
2	Workplace by Facebook -- now just Workplace -- team	15:59:33
3	in London.	15:59:38
4	From late 2018 to mid-2021, I worked on	15:59:41
5	the Central Integrity team.	15:59:47
6	And since mid-2021, I've been working on a	15:59:52
7	team called "Central Customer Support."	15:59:57
8	Q. Okay. Thank you.	16:00:01
9	And what -- what is your degree?	16:00:03
10	Do you have a degree after high school?	16:00:07
11	A. My education, I have a master's in	16:00:11
12	engineering from the University of Nottingham.	16:00:15
13	Q. And was that --	16:00:18
14	A. Specifically, it's in -- sorry.	16:00:19
15	Q. Sorry. Go ahead.	16:00:21
16	A. Sorry, it's a master's in electronic	16:00:22
17	engineering from the University of Nottingham.	16:00:25
18	Q. Thank you. Mr. Cross, have you spoken to	16:00:30
19	anyone other than your attorneys about your	16:00:32
20	deposition today?	16:00:35
21	A. I have.	16:00:39
22	I -- what kind of information are you	16:00:41
23	looking for there?	16:00:45
24	Q. Sure. I'll ask more specific questions.	16:00:47
25	Did you speak to colleagues of yours about	16:00:50

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1	your testimony today?	16:00:53
2	A. I spoke to some people currently employed	16:00:55
3	by Meta to understand their experiences relating to	16:00:57
4	this matter, yes.	16:01:05
5	Q. And who did you speak with?	16:01:07
6	A. I spoke with Eddie O'Neil, Ime Archibong,	16:01:11
7	Steven Elia, Dan Xu, Allison Hendrix, Eugene	16:01:18
8	Zarakhovsky, Francisco Varela, and Amit Sangani.	16:01:25
9	Q. And were those conversations all of	16:01:34
10	different amounts of time?	16:01:37
11	Were there some people you spoke to more	16:01:38
12	than others?	16:01:40
13	Describe in a little more detail, if you	16:01:41
14	can.	16:01:43
15	A. I spoke to each of those people once for	16:01:45
16	between 30 and 45 minutes each. The conversation	16:01:51
17	between Dan and Steven was one conversation with	16:01:57
18	both of them on the call.	16:02:01
19	Q. And were any attorneys present during any	16:02:09
20	of those conversations?	16:02:11
21	A. Yes. Attorneys for Facebook/Meta, were	16:02:14
22	present for all of those conversations, yes.	16:02:18
23	Q. Okay. And who were the attorneys that	16:02:22
24	were present, if you know their names?	16:02:23
25	A. There were a number of people on the call,	16:02:29

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1	so I probably can't give you everybody who was	16:02:30
2	there, but a combination of Rob -- Mr. Blume,	16:02:34
3	Ian Chen, and Matt -- I'm not sure I'm going to	16:02:41
4	pronounce this correctly -- Buongiorno.	16:02:49
5	Sorry, Matt, if you're listening. I	16:02:52
6	apologize if I got that wrong.	16:02:55
7	Q. Thank you. Good enough to identify him.	16:02:59
8	And, sir, did you review any of the	16:03:01
9	pleadings or filings that have been made in this	16:03:03
10	case to prepare for your testimony today?	16:03:06
11	A. I have, yes.	16:03:09
12	Q. And do you recall what specifically you	16:03:11
13	reviewed?	16:03:13
14	A. My attorneys sent over a -- a set of	16:03:16
15	documents for me to review in advance of this	16:03:21
16	testimony, and I also received a set of documents,	16:03:25
17	I think, from you folks; around 36 documents, I	16:03:28
18	think.	16:03:34
19	Q. And were you sent a stack of documents	16:03:34
20	from your attorneys?	16:03:36
21	Were they assembled in a binder or	16:03:38
22	presented to you in some other manner like that?	16:03:40
23	A. All of the documents I've reviewed to	16:03:43
24	prepare for today I've reviewed electronically.	16:03:46
25	Q. Okay. In a single folder?	16:03:50

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1	Were they delivered in a single folder, or	16:03:53
2	was it a series of separate files?	16:03:55
3	A. I received a link to a Google Drive folder	16:03:58
4	that contained a number of files.	16:04:02
5	Q. Thank you.	16:04:04
6	MR. LOESER: And, Counsel, as you know,	16:04:08
7	we've asked for Facebook to provide us with	16:04:09
8	identification of the materials given to the	16:04:11
9	witness to prepare for his testimony, and we would,	16:04:13
10	again, ask that you do that with respect to this	16:04:15
11	deposition.	16:04:18
12	(Reporter requested clarification.)	16:04:18
13	MR. BLUME: I understood the request.	16:04:25
14	BY MR. LOESER:	16:04:28
15	Q. And, Mr. Cross, you also indicated that	16:04:29
16	you reviewed some materials that you believe that	16:04:31
17	the plaintiffs sent over to you. Is that correct?	16:04:33
18	A. Yes. That's my understanding. There was	16:04:37
19	a set of documents that was sent over for me to	16:04:41
20	read in advance of today's testimony.	16:04:46
21	Q. And did you review those documents?	16:04:49
22	A. I did review those documents, yes.	16:04:54
23	Q. And how long would you say you spent	16:05:00
24	reviewing the documents that were delivered to you	16:05:03
25	from the plaintiffs?	16:05:05

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1	A. On the order of eight to ten hours or so.	16:05:12
2	Q. Good. Thank you.	16:05:20
3	And were those all documents that you had	16:05:21
4	seen before, or were there some new things in there	16:05:23
5	for you?	16:05:26
6	A. That list contained documents that I	16:05:29
7	hadn't seen before.	16:05:30
8	Q. Including documents that were -- that were	16:05:33
9	produced by Facebook in this case.	16:05:36
10	Let me ask that slightly differently.	16:05:40
11	Including documents that were internal	16:05:42
12	correspondence and other materials that were	16:05:43
13	created by Facebook?	16:05:45
14	A. That's my understanding, yes.	16:05:48
15	MR. LOESER: So if we could mark --	16:05:55
16	actually, we don't need to mark. If we could show	16:05:56
17	Mr. Cross what has been previously marked	16:06:00
18	Exhibit 330, I believe.	16:06:02
19	(Previously marked Exhibit 330 was	16:06:03
20	presented to the witness.)	16:06:03
21	BY MR. LOESER:	16:06:04
22	Q. This should come up on your screen.	16:06:04
23	Again, we're at the mercy of the great Internet	16:06:07
24	here, but you will see the deposition notice that's	16:06:10
25	been served in this case by the plaintiffs on	16:06:13

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1	Facebook.	16:06:16
2	Let me know when you can see that	16:06:17
3	document.	16:06:19
4	MR. BLUME: I believe that's Exhibit 332.	16:06:26
5	MR. LOESER: We have it as Exhibit 330.	16:06:29
6	Prior Exhibit 330, yeah. This isn't a new exhibit,	16:06:34
7	Rob, sorry. This is -- it was marked during	16:06:38
8	Ms. Hendrix's deposition. I'll try and make	16:06:40
9	that --	16:06:43
10	MR. BLUME: On the screen that I'm looking	16:06:44
11	at, it says "332" on the exhibit sticker.	16:06:45
12	MR. LOESER: Refresh your screen. My	16:06:52
13	technology expert tells me that you need to refresh	16:06:55
14	your screen.	16:06:58
15	It should be corrected now.	16:07:05
16	MR. BLUME: Yes, with thanks to your	16:07:08
17	technology expert. Appreciate it.	16:07:09
18	BY MR. LOESER:	16:07:12
19	Q. So, Mr. Cross, you're looking at what's	16:07:12
20	called "Plaintiff's Second Amended Notice of	16:07:16
21	Deposition of Defendant Facebook, Inc., Pursuant to	16:07:18
22	Federal Rule of Civil Procedure 30(b)(6)."	16:07:20
23	Have you seen this notice before?	16:07:25
24	A. Yes.	16:07:29
25	Q. And you understand that you have been	16:07:31

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1	designated to testify as to certain topics in	16:07:33
2	response to this notice.	16:07:36
3	A. That's my understanding, yes.	16:07:40
4	Q. Okay. And if you could turn -- attached	16:07:42
5	to the notice, there is an appendix. And if you	16:07:45
6	turn all the way to page 13, or click through to	16:07:48
7	that page or whatever you would need to do on your	16:07:51
8	screen. I'm turning to page 13, but ...	16:07:54
9	A. I have page 13 in front of me.	16:08:02
10	Q. Okay. And on page 13, there are three	16:08:04
11	topics. The bottom two, there's Topic 6 and	16:08:07
12	Topic 7.	16:08:13
13	Do you see that?	16:08:14
14	A. I see that.	16:08:14
15	Q. And is it your understanding that you have	16:08:15
16	been designated to testify on behalf of Facebook	16:08:17
17	with regard to Topics 6 and 7?	16:08:23
18	A. That's correct.	16:08:27
19	Q. Okay. And as we get into these topics in	16:08:28
20	more detail, your counsel will probably want to	16:08:31
21	clarify the -- the particular matters within those	16:08:34
22	paragraphs that you are prepared to testify about,	16:08:37
23	but we can get to that later.	16:08:40
24	But for present purposes, what's important	16:08:43
25	is that these are the two topics that you	16:08:46

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1	understand that you are here to testify about.	16:08:48
2	A. Those are the two topics I understand I'm	16:08:53
3	here to testify about.	16:08:55
4	Q. And do you understand that by being	16:08:58
5	designated to testify about these topics, you are	16:09:00
6	authorized to speak for Meta/Facebook on the	16:09:04
7	specified matters?	16:09:08
8	A. That's -- that's my understanding, yes.	16:09:11
9	Q. And you understand that your testimony,	16:09:14
10	which is under oath, is binding on Meta.	16:09:15
11	A. That's my understanding, yes.	16:09:20
12	Q. Okay. And I'm going to use Meta and	16:09:22
13	Facebook interchangeably here. I mean the same	16:09:24
14	thing every time, and, like you said before, if	16:09:26
15	there's a distinction that needs to be drawn, you	16:09:29
16	are going to draw that for me.	16:09:32
17	A. I will ask for clarification where I think	16:09:33
18	one is needed if the entities need to be	16:09:36
19	distinguished, yes.	16:09:38
20	Q. And, sir, do you understand that the time	16:09:40
21	period at issue in this litigation is 2007 to the	16:09:42
22	present?	16:09:46
23	A. That's my understanding, yes.	16:09:48
24	Q. Okay. So all of my questions will concern	16:09:50
25	that time period unless I specify something	16:09:53

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1	narrower.	16:09:55
2	Is that fair?	16:09:56
3	A. That's fair.	16:09:57
4	Q. So before we get into the specifics of	16:10:06
5	each of these topics, I think it would be important	16:10:08
6	to have a conversation about basic terminology to	16:10:10
7	make sure that when you testify, the record is	16:10:13
8	clear as to what you're saying.	16:10:14
9	Is that fair?	16:10:16
10	A. I'm happy to make sure we can align on	16:10:18
11	terminology, yes.	16:10:22
12	Q. Okay. Some of it will seem very basic to	16:10:23
13	you, but trust me, it's important for the court and	16:10:25
14	for the record and, if there's a jury in this case,	16:10:27
15	for the jury to understand and hear from Facebook	16:10:30
16	what these terms mean.	16:10:33
17	So if you'll bear with me, I'll run	16:10:34
18	through some of these basic concepts.	16:10:36
19	To start, what is an "app"?	16:10:39
20	A. An app is an entity in Facebook's systems	16:10:43
21	that has the ability to access information via the	16:10:53
22	Graph API.	16:11:00
23	There was a broader definition of "app"	16:11:01
24	that is pursuant to mobile applications and so on,	16:11:05
25	but an app in the Facebook ecosystem is a -- an	16:11:08

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1	entity that -- that has an app ID and can access	16:11:13
2	the Graph API in some way.	16:11:18
3	Q. And there are third-party apps and	16:11:22
4	Facebook apps. Correct?	16:11:24
5	A. Can you help me understand what you mean	16:11:28
6	by "third-party apps"?	16:11:29
7	Q. Yeah. I'm glad you asked.	16:11:31
8	So Facebook creates apps itself for the	16:11:34
9	platform. Right?	16:11:36
10	A. There are some apps that Facebook	16:11:41
11	engineers, Facebook, Inc., would have built that	16:11:45
12	may call the Platform APIs, yes.	16:11:49
13	Q. And then there are -- I'll call them	16:11:54
14	"third parties," but entities not owned or	16:11:57
15	affiliated with Facebook that also create apps.	16:11:59
16	A. The Facebook Platform allowed developers	16:12:04
17	to create -- third parties to create applications	16:12:07
18	on the Facebook Platform, yes.	16:12:10
19	Q. Okay. And so over the course of our	16:12:12
20	conversation today, when I refer to "third-party	16:12:14
21	apps," that is what I will be referring to.	16:12:16
22	Is that fair?	16:12:19
23	A. So to be clear, you're referring to a	16:12:20
24	third party that, in this context, is an	16:12:23
25	application developed by an entity other than	16:12:28

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1	Facebook, Inc., or Meta Platforms?	16:12:31
2	Q. Yes. Thank you. That's a good	16:12:36
3	clarification.	16:12:38
4	And you used some other terms in your	16:12:39
5	answer, and I guess we may as well define those as	16:12:42
6	well.	16:12:46
7	What is the "Facebook Platform"?	16:12:46
8	A. The Facebook Platform is a collection of	16:12:50
9	technologies that enable developers to build	16:12:57
10	applications that could interact with the Facebook	16:13:01
11	product, Facebook.com or the Facebook product as	16:13:08
12	a -- as a regular user would think of it.	16:13:14
13	Q. And help me understand: What is the	16:13:19
14	"Facebook product"?	16:13:21
15	A. So the Facebook product, by that, I'm	16:13:25
16	referring to, you know, the website Facebook.com	16:13:28
17	and the Facebook iOS and Android apps, for example,	16:13:32
18	and the experience you have when using the	16:13:39
19	Facebook.com website or the Facebook mobile apps on	16:13:43
20	iOS and Android.	16:13:48
21	Q. Thank you for that.	16:13:52
22	And, sir, what is the "Facebook	16:13:54
23	Social Graph"?	16:13:55
24	A. My understanding is that the Social Graph	16:13:57
25	would be a term used to explain the relationships	16:13:59

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1	between users of the Facebook product; who is	16:14:06
2	friends with who.	16:14:11
3	Q. Okay. And we'll have some more specific	16:14:13
4	questions about how that functions later.	16:14:16
5	What is an "API"?	16:14:18
6	A. An API, which stands for application	16:14:24
7	programming interface, is a way for -- a technical	16:14:27
8	means by which information can be exchanged between	16:14:34
9	entities.	16:14:37
10	Q. And are you familiar with the term	16:14:42
11	"high-signal APIs"?	16:14:44
12	A. I'm not familiar with that term.	16:14:47
13	Q. Are some APIs considered more sensitive in	16:14:51
14	terms of the information they provide than others?	16:14:53
15	A. Can you help me understand in which	16:14:58
16	context you are referring to? My answer with APIs	16:15:00
17	was a general concept.	16:15:03
18	Q. Sure. In the context of an app obtaining	16:15:06
19	information about Facebook users through APIs, are	16:15:10
20	there some APIs that are considered more sensitive	16:15:13
21	than others in terms of the information that's	16:15:17
22	being gathered?	16:15:22
23	A. So I would -- yeah, I think it's fair to	16:15:27
24	say that there are some APIs which are considered	16:15:31
25	more sensitive than others, yes.	16:15:37

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1	Q. And why is that? What is the type of	16:15:41
2	information that would be considered more sensitive	16:15:43
3	in that context?	16:15:46
4	A. So it depends on the definition of	16:15:48
5	"sensitive."	16:15:52
6	Can you help me understand what you mean	16:15:52
7	by "sensitive"?	16:15:54
8	Q. Yes. I mean about the Facebook user data	16:15:55
9	and information that is accessed via an API.	16:15:57
10	Are there some APIs that have the ability	16:16:01
11	to access what Facebook has considered more	16:16:03
12	sensitive information about its users?	16:16:07
13	A. So good example of a -- of an API that I	16:16:11
14	think is -- would be considered sensitive is an API	16:16:15
15	███████████████████████████████████████	████████
	███████████████████████████████████	████████
	█████████████████████████	████████
	████████████████████████	████████
	████████████████████████████	████████
	████████████████████████████████	████████
	████████	████████
22	Q. Okay. And help me understand why that	16:16:46
23	would be considered sensitive.	16:16:50
24	Would that be considered highly sensitive	16:16:52
25	in the Facebook terminology?	16:16:55

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```
 1          A.   I'm not sure what you would be referring      16:16:58

 2     to with -- by "highly sensitive."  I'm not aware of      16:16:59

 3     a specific set of things that would be classed as        16:17:05

 4     "highly sensitive."                                      16:17:09

 5          Q.   Okay.  How about friends permissions           16:17:12

 6     and/or -- friend-related APIs?                           16:17:16

 7          Are you familiar with friend-related APIs?          16:17:19

 8          A.   Can you understand -- just represent --        16:17:23

 9     just for clarification, can you help me understand       16:17:26

10     what you mean by "friend-related APIs"?                  16:17:28

11          Q.   Sure.  And we'll get into this more -- in      16:17:30

12     more detail later as well.                               16:17:33

13          But APIs that provide access to the                 16:17:35

14     information about a Facebook user's friends, are         16:17:36

15     those referred to by Facebook as "friends               16:17:39

16     permissions" or "friends APIs"?                          16:17:42

17          A.   There was a set of permissions that            16:17:46

18     were -- were referred to as the friend permissions,     16:17:48

19     yes.                                                     16:17:52

20          Q.   And did Facebook consider those                16:17:54

21     permissions to be sensitive?                             16:17:56

22          A.   I think -- I'm not sure -- I'm not sure if     16:18:01

23     there's a way to specifically answer that.  Those       16:18:08

24     were a set of permissions that were available at        16:18:14

25     one time on the Platform and are no longer              16:18:16
```

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1	generally available.	16:18:21
2	Q. And, again, from the perspective of	16:18:24
3	Facebook, did Facebook discuss those permissions in	16:18:26
4	terms of them being sensitive or highly sensitive?	16:18:31
5	A. They were certainly discussed in the	16:18:39
6	context of being a set of permissions worth	16:18:41
7	discussing.	16:18:47
8	They may have been discussed at times as	16:18:48
9	sensitive. I'm not sure about whether or not they	16:18:51
10	were discussed as highly sensitive. There's no	16:18:53
11	official designation for those permissions that was	16:18:55
12	consistent across the company.	16:19:00
13	Q. And we're about to move on to some other	16:19:03
14	topics, but can you give me an example of a	16:19:06
15	permission that Facebook did refer to as "highly	16:19:09
16	sensitive"?	16:19:11
17	A. I can't give you an example here today of	16:19:14
18	a permission or a -- do you -- from reviewing the	16:19:16
19	documents I've reviewed, I don't recall a set of	16:19:21
20	APIs or permissions that would have been	16:19:24
21	considered -- referred to as "highly sensitive."	16:19:26
22	It's possible that they were referred to	16:19:29
23	using that term by some people, but I don't -- I	16:19:31
24	don't think there was an official designation in	16:19:35
25	any way.	16:19:38

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1	Sorry. Official -- I'm not aware of an	16:19:41
2	official designation of "highly sensitive."	16:19:44
3	Q. And if you were asked to prepare a list of	16:19:47
4	everything that Facebook -- every API Facebook	16:19:50
5	considered sensitive or highly sensitive, who at	16:19:54
6	Facebook would you go talk to to get that	16:19:57
7	information?	16:19:59
8	███ ████████████████████████████	██████
	████████████████████████████████	██████
	█████████████████████████████	██████
	███████████████████████████████	██████
	████████	██████
	████████████████████████████	██████
	███████████████████████████	██████
15	Q. And do you know -- do you recall who those	16:20:36
16	people -- who was in charge of that project?	16:20:38
17	A. I think Konstantine -- Konstantinos -- I	16:20:41
18	really can't pronounce his last name.	16:20:47
19	"KP" as he is otherwise known --	16:20:50
20	Konstantinos Papamiltiadis -- I don't even want to	16:20:52
21	try -- was leading that project, as I understand	16:20:55
22	it.	16:20:57
23	Q. Okay. And there are some documents that	16:20:57
24	have his name, and I can't begin to pronounce that	16:20:59
25	either, so we'll just refer to him as "KP" for the	16:21:02

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1	benefit of the court reporter.	16:21:05
2	Understood?	16:21:07
3	A. That's good. That's good with me.	16:21:08
4	Q. So there was a few other terms that you	16:21:10
5	mentioned that I want to make sure we understand	16:21:12
6	and I've used as well.	16:21:14
7	One is a "permission."	16:21:16
8	In the context of an API, what is a	16:21:18
9	"permission"?	16:21:20
10	A. In the context of -- can you help me	16:21:23
11	understand, "in the context of an API"?	16:21:26
12	Q. Or APIs generally.	16:21:32
13	A. So my understanding would be that in the	16:21:35
14	context of an API generally, a permission would	16:21:38
15	refer to a way for users -- users of the API or	16:21:42
16	consumers or integration -- integrators of the API	16:21:48
17	to determine what information was available over	16:21:52
18	that interface.	16:21:59
19	Q. And speaking specifically about the -- the	16:22:03
20	entities that were accessing information on the	16:22:07
21	Facebook Platform, does "permission" refer to the	16:22:10
22	grant of access by Facebook to APIs?	16:22:13
23	A. "Permissions" in the Facebook Platform	16:22:17
24	context refers to permissions that a user, a	16:22:22
25	Facebook user, would grant an application to which	16:22:27

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1	information the application would then have access	16:22:34
2	to after the user had given permission.	16:22:36
3	Q. And that brings me to my next question,	16:22:41
4	which is capability.	16:22:44
5	In the context of APIs, what is the	16:22:46
6	definition of "capabilities" or a "capability"?	16:22:49
7	A. Again, do you mean in the context of an	16:22:54
8	API generally, or --	16:22:56
9	Q. Yes.	16:22:59
10	A. So in the context of an API generally,	16:23:01
11	"capability" doesn't have an industry-standard	16:23:04
12	meaning.	16:23:07
13	Q. How does Facebook generally use that term?	16:23:13
14	A. In the context -- in the context of the	16:23:18
15	Facebook Platform, "capability" refers to a set of	16:23:21
16	features that would be available to some apps on	16:23:30
17	the Facebook Platform, and that would have enabled	16:23:37
18	a range of functionality.	16:23:41
19	Q. And specifically, when talking about APIs,	16:23:44
20	would a "capability" relate to the entity's ability	16:23:47
21	to have access to certain APIs on the Platform?	16:23:54
22	A. Capabilities would -- would modify the --	16:24:00
23	the behavior of the Facebook Platform in a number	16:24:06
24	of different ways.	16:24:08
25	Q. And, again, I'm trying to understand how	16:24:11

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1	the term is used in the context of Facebook's	16:24:13
2	discussions of what APIs a third party has access	16:24:15
3	to.	16:24:19
4	Does that help in any way to flesh out	16:24:21
5	what it means?	16:24:25
6	A. So a capability -- my previous answer, I	16:24:27
7	think, is accurate in that a capability is a way	16:24:30
8	for the standard behavior of the Facebook Platform	16:24:34
9	to be modified in some way.	16:24:37
10	Q. And I'm -- I apologize for struggling to	16:24:42
11	understand this, but -- so let's assume that an app	16:24:44
12	or a developer wants to have access to friend	16:24:49
13	data-related permissions. Okay?	16:24:53
14	Can we start with that premise?	16:24:59
15	And I'll ask a question based on that	16:25:03
16	premise:	16:25:05
17	Is there a capability that would be	16:25:06
18	provided to that developer that would enable access	16:25:07
19	to those permissions -- or to those APIs?	16:25:10
20	A. Can you help me understand what time frame	16:25:15
21	you're referring to?	16:25:17
22	Q. Sure. Any time between 2007 and the	16:25:21
23	present.	16:25:24
24	A. So I think the answer depends on the time.	16:25:28
25	In -- you know, the early part of that time period,	16:25:34

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1	let's say 2012, access to the friend permissions	16:25:40
2	was available to all applications on the Facebook	16:25:47
3	Platform.	16:25:51
4	Later on, the friend permissions were not	16:25:53
5	available to every app on the Platform, and access	16:25:58
6	to those would have required a modification to the	16:26:03
7	standard API behavior. And that would have been	16:26:06
8	governed by capability.	16:26:10
9	Q. Thank you. You've helped me understand	16:26:12
10	any number of documents I have reviewed now.	16:26:14
11	That's helpful information.	16:26:17
12	We can move on.	16:26:20
13	Do you understand what "read permission	16:26:22
14	APIs" are?	16:26:24
15	A. So there's two different concepts that are	16:26:28
16	worth picking apart: There's the concept of	16:26:31
17	permissions, and there's a concept of APIs, and	16:26:35
18	those are separate concepts.	16:26:38
19	So I'm not sure how to answer the	16:26:44
20	question.	16:26:46
21	Q. Let me break it down. I've seen reference	16:26:47
22	to "read stream APIs," for example.	16:26:50
23	Are you familiar with those?	16:26:52
24	A. I am familiar with the -- the concept of a	16:26:56
25	read stream API, yes.	16:26:59

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1	Q. Okay. What is that?	16:27:02
2	A. In the context of the Facebook Platform?	16:27:07
3	Is that what you're asking about?	16:27:09
4	Q. Yes.	16:27:11
5	A. My understanding is that the read stream	16:27:13
6	API would allow an application to access a --	16:27:16
7	the -- an authorized -- a user who -- let me start	16:27:20
8	again to make sure I'm framing this correctly for	16:27:24
9	you.	16:27:26
10	The read stream API would allow an	16:27:28
11	application to access a user's Newsfeed. In order	16:27:31
12	to access that API, the user would have to give the	16:27:35
13	application permission to do so.	16:27:41
14	Q. And what about Social Context APIs? What	16:27:45
15	are those?	16:27:50
16	A. My understanding is a Social Context API	16:27:54
17	refers to an API that helped applications	16:27:57
18	understand the relationships between two users of	16:28:02
19	the application.	16:28:06
20	Q. Two users, or any number of users?	16:28:10
21	A. My understanding is the Social Context API	16:28:15
22	referred to social context between two app-using	16:28:17
23	users.	16:28:22
24	Q. And we'll get into this in more detail	16:28:25
25	later, but both with read stream and social context	16:28:28

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1	APIs, the information that the app or developer	16:28:31
2	would access would include friend information for	16:28:36
3	the users that authorized the app or developer to	16:28:38
4	have access. Right?	16:28:43
5	A. Sorry. Can you restate the question? I	16:28:44
6	want to make sure I fully understand.	16:28:46
7	Q. Sure. You described what a read stream	16:28:48
8	permission was, and you described what a social	16:28:50
9	context API was.	16:28:53
10	Both of those APIs, if authorized by a	16:28:55
11	user, would provide access to friends information	16:28:57
12	of that user. Right?	16:28:59
13	A. The read stream API would grant access to	16:29:04
14	an app using a person's Newsfeed. A Newsfeed on	16:29:07
15	Facebook typically contains content posted by that	16:29:13
16	user's friends.	16:29:17
17	Q. Okay. And how about the social context	16:29:18
18	API? Would that do the same?	16:29:19
19	A. I'd have to review the API documentation	16:29:24
20	for -- for the -- if there was a specific API	16:29:26
21	you're referring to, exactly how it behaved.	16:29:31
22	Q. And that's a helpful qualification.	16:29:36
23	Is there a set of -- or a place where	16:29:40
24	documentation of APIs is stored so that if Facebook	16:29:43
25	wanted to understand the specific information that	16:29:46

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1	that API made available, it could go to that set	16:29:49
2	and find the answer?	16:29:52
3	A. The Facebook developer website is	16:29:56
4	typically where API documentation is stored and	16:29:58
5	published.	16:30:02
6	Q. And that's true for any API that has ever	16:30:04
7	existed, or simply for the active APIs?	16:30:08
8	A. That -- the Facebook developer website is	16:30:16
9	typically for APIs that are available -- publicly	16:30:18
10	available.	16:30:22
11	And so not every API that's ever existed	16:30:23
12	would necessarily have a documentation -- would	16:30:26
13	have a document on the Facebook developer website.	16:30:30
14	Q. Okay. So where would one go to find	16:30:33
15	information on every API that ever existed?	16:30:35
16	A. The -- I'm not sure every API that ever	16:30:42
17	existed necessarily had a -- a document -- an	16:30:46
18	associated document written about it.	16:30:51
19	The source of truth for which APIs existed	16:30:53
20	and so on would have been the Facebook code base	16:30:57
21	itself.	16:31:01
22	Q. And how would one go about searching that	16:31:03
23	for information about a defunct API?	16:31:06
24	A. There are internal tools at Facebook that	16:31:10
25	allow user search for code which existed in the	16:31:13

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1	Facebook code base.	16:31:19
2	Q. And what are those internal tools?	16:31:21
3	A. I am not sure of the name of the internal	16:31:27
4	tools. I'd have to get back to you on -- on the	16:31:31
5	specific name of the tool.	16:31:35
6	MR. LOESER: And, Counsel, if you could	16:31:39
7	get back to us with that information, I'd	16:31:40
8	appreciate it.	16:31:42
9	MR. BLUME: Noted.	16:31:47
10	BY MR. LOESER:	16:31:48
11	Q. And, Mr. Cross, what is a "private API"?	16:31:50
12	A. Can you help me understand the context in	16:31:58
13	which you're asking the question?	16:32:01
14	Q. Sure. In the context of email and other	16:32:03
15	materials reviewed -- that you reviewed to prepare	16:32:05
16	for this deposition, the term "private API" is	16:32:09
17	frequently used.	16:32:14
18	Do you have an understanding of what is	16:32:15
19	meant by that at Facebook?	16:32:17
20	A. My understanding of the term "private API"	16:32:19
21	is that it would be an API that was not generally	16:32:22
22	available to most applications on the Facebook	16:32:27
23	Developer Platform.	16:32:33
24	Q. Okay. So explain to me what the	16:32:36
25	difference is between a private API and a	16:32:38

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1	capability.	16:32:41
2	A. So a "private API" would refer to a	16:32:42
3	specific API method, generally, that could be	16:32:47
4	accessed by developers.	16:32:51
5	A "capability" is the means by which	16:32:53
6	access to that API is governed.	16:32:56
7	Q. We discussed how APIs function and how	16:33:07
8	APIs provide access to developers or other entities	16:33:09
9	about information about Facebook users.	16:33:16
10	Were there any other technical means by	16:33:21
11	which Facebook shared information about its users	16:33:24
12	with developers or other entities?	16:33:25
13	A. The Graph API was the -- was a primary way	16:33:31
14	that information would be exchanged with third	16:33:36
15	parties. It's possible at the company there were	16:33:40
16	other ways for people to exchange information with	16:33:44
17	third parties; email, for example. But the	16:33:49
18	Graph API would have been one of the common ways to	16:33:55
19	programmatically exchange information.	16:33:58
20	Q. And can you identify any other ways to	16:34:01
21	programmatically exchange information?	16:34:04
22	A. I don't have the ability to -- to know	16:34:11
23	every form of information interchange ever used	16:34:15
24	by -- by the company, so I -- I don't feel I can	16:34:20
25	specify other -- any specific other systems. The	16:34:26

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1	Graph API would have been a common one.	16:34:31
2	There were other APIs in existence over	16:34:34
3	time. Two examples would be the REST API and	16:34:38
4	something called FQL.	16:34:45
5	Q. And explain, if you can, what those two	16:34:49
6	systems are.	16:34:51
7	A. So the REST API was a -- a mechanism, a	16:34:53
8	form of API used by the Facebook Platform to	16:34:59
9	exchange information with third parties that	16:35:03
10	pre-existed the Graph API, and the two were in use	16:35:05
11	simultaneously for a period.	16:35:12
12	FQL --	16:35:14
13	Q. Let me pause you there. Sorry to	16:35:16
14	interrupt, but what period did that exist, and when	16:35:17
15	was it overlapping?	16:35:21
16	A. The REST API, my understanding, was the	16:35:24
17	original form of the Facebook Developer Platform.	16:35:28
18	So my understanding is that was launched in 2007.	16:35:30
19	And my understanding is the REST API was	16:35:37
20	deprecated in -- I'm not sure of the specific date,	16:35:39
21	but my understanding is around the time that	16:35:43
22	Graph API Version 1.1 or 1.2 was -- was announced.	16:35:46
23	But that -- we can follow up with a	16:35:53
24	specific because I want to make sure I don't give	16:35:57
25	you the wrong answer.	16:36:00

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1	Q. Sure. And do you have a rough idea of	16:36:01
2	what year the Graph API came into being?	16:36:03
3	A. The Graph API was launched in April 2010.	16:36:07
4	Q. So we've touched on the Graph API	16:36:17
5	Version 1, and that's another important term. I	16:36:20
6	want to make sure I understand that.	16:36:23
7	So Graph API version, was it 1.0 or 1.1?	16:36:26
8	What was the very first version of that	16:36:31
9	system?	16:36:33
10	A. The Graph API was launched in April 2010.	16:36:35
11	At the time, it was just called the "Graph API."	16:36:39
12	Q. Okay. And I gather from your LinkedIn	16:36:42
13	résumé, you had something to do with the initial	16:36:45
14	development of the Graph API version zero, I guess,	16:36:47
15	whatever you call it. Is that right?	16:36:53
16	A. So the version of the API that was	16:36:55
17	originally launched in April 2010 is what later	16:36:57
18	became known as Version 1.	16:37:00
19	I was actually not involved in the	16:37:03
20	development of that. It was launched in	16:37:05
21	April 2010. I joined the company in	16:37:07
22	September 2010.	16:37:11
23	Q. Okay. So let's -- let me make sure I	16:37:15
24	understand the different versions.	16:37:17
25	It starts with Graph API, period, and then	16:37:19

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1	it evolved into what?	16:37:22
2	What were the different evolutions of	16:37:24
3	that, of the Graph API?	16:37:26
4	A. It was called just the "Graph API" from --	16:37:29
5	from launch in April 2010. That -- that, kind of,	16:37:32
6	version later became known as "API Version 1" when	16:37:38
7	a new version that was referred to as	16:37:43
8	"API Version 2" was launched in April 2014.	16:37:45
9	Q. And in the evolution from Version 1 and	16:37:52
10	Version 2, were there specific reasons why Facebook	16:37:55
11	made changes?	16:37:59
12	A. The Graph API, the original version of the	16:38:02
13	Graph API, evolved constantly over time as well.	16:38:06
14	So there were changes being made to the -- to the	16:38:10
15	Graph API from launch for a wide range of reasons.	16:38:14
16	Q. Okay. And, specifically, in the changes	16:38:20
17	from Version 1 to Version 2, what were the	16:38:22
18	reasons -- what were the major changes that were	16:38:24
19	made?	16:38:27
20	A. It was a large number of changes launched	16:38:29
21	as part of API Version 2.	16:38:33
22	How much -- how much depth would you like	16:38:37
23	me to go into?	16:38:39
24	Q. Well, let me ask it this way: What were	16:38:41
25	the problems that Facebook was trying to solve in	16:38:44

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1	the transition from Version 1 to Version 2?	16:38:47
2	A. There was a -- also a whole -- also a	16:38:51
3	whole range of problems that -- that we were	16:38:53
4	attempting to solve.	16:38:56
5	Can you help me understand, like, what you	16:38:58
6	are looking for?	16:39:00
7	Q. Well, let's start at the -- are you	16:39:01
8	familiar with the expression "the 30,000-foot	16:39:03
9	level"?	16:39:07
10	A. I've heard of that term, yes.	16:39:08
11	Q. Okay. So let's think about it in terms of	16:39:10
12	at the 30,000-foot level if there were major issues	16:39:13
13	that Facebook was attempting to solve through that	16:39:17
14	transition, if any of those come to mind.	16:39:19
15	A. I'll do my best to explain some.	16:39:23
16	One was that the original way that	16:39:27
17	breaking changes had been made in the Facebook	16:39:32
18	Developer Platform was in an app configuration.	16:39:34
19	So in your app, configuring your app	16:39:39
20	settings, that was a workable mechanism when the	16:39:42
21	Facebook Platform was primarily called by	16:39:48
22	server-side applications.	16:39:52
23	In the early 2010s, the developer	16:39:55
24	ecosystem moved more and more to mobile	16:40:00
25	applications, which meant developers' code running	16:40:02

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1	on devices, which meant that it was harder for them	16:40:08
2	to centrally control changes to the API.	16:40:12
3	And so one of the big problems that	16:40:15
4	Facebook was trying to solve with the launch of	16:40:18
5	API Version 2 was the introduction of versioning	16:40:21
6	itself; to allow developers to specify the API	16:40:23
7	behavior they wanted when calling the API.	16:40:28
8	Q. Okay. And can you think any of other	16:40:32
9	major problems Facebook was attempting to resolve	16:40:34
10	with Graph API Version 2?	16:40:39
11	A. Another thing that was being solved with	16:40:45
12	Version 2 is the limiting of the amount of data	16:40:48
13	that was available via the API.	16:40:53
14	Q. And why did Facebook want to do that?	16:40:58
15	A. It was a range of reasons why Facebook was	16:41:02
16	attempting to alter the amount of information that	16:41:07
17	was available via the API.	16:41:10
18	██████████████████████████ ████
	██████████████████████ ████
	██████████████████████████ ████
	█████████████████████████ ████
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24	that decision.	16:41:39
25	Q. And when Facebook heard from users about	16:41:40

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1	their concerns, were those concerns with respect to	16:41:43
2	any particular types of user information that was	16:41:48
3	being made available to third parties?	16:41:51
4	A. There was a -- a range of concerns. One	16:41:55
5	of them was the ability for apps to access friends	16:41:59
6	information.	16:42:04
7	Q. And was another reason to limit the amount	16:42:07
8	of user information made available to developers a	16:42:10
9	desire by Facebook to better profit from the data	16:42:17
10	it collected about users by giving away less to	16:42:20
11	developers for free?	16:42:23
12	A. Can you repeat the question?	16:42:28
13	Sorry, I want to make sure I understand.	16:42:29
14	Q. Sure. It took me great mental acuity to	16:42:31
15	say it in the first place, so how about if I	16:42:36
16	just -- if we read it back and see, if you heard it	16:42:38
17	a second time, it makes better sense. It might	16:42:41
18	just be a bad question, but let me look and see.	16:42:44
19	And I can read it.	16:42:47
20	Was another reason to limit the amount of	16:42:48
21	user information made available to developers a	16:42:50
22	desire by Facebook to better profit from the data	16:42:53
23	it collected about users by giving away less of	16:42:55
24	that information for free?	16:42:59
25	A. Having spoken to people and read	16:43:05

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1	documents, that's -- that's not a concern that was,	16:43:08
2	as I understand it, front and center in the	16:43:11
3	decision-making.	16:43:14
4	Q. Was that a concern that was discussed or	16:43:15
5	expressed at times, however?	16:43:17
6	A. I have recalled seeing documents that	16:43:23
7	were -- there were a number of discussions about	16:43:28
8	how to balance the equities between users,	16:43:32
9	developers, and Facebook -- in this case, the	16:43:36
10	company Meta but also the application -- as to how	16:43:39
11	the Facebook Developer Platform was being used.	16:43:43
12	Q. Thank you. Do you know, when was the	16:43:50
13	first time or time period that Facebook heard	16:43:53
14	concerns expressed by users about the amount of	16:43:58
15	their information that was being made available to	16:44:01
16	third parties?	16:44:04
17	A. I don't know -- I'm not able to sense	16:44:09
18	specifically when those concerns began to be heard.	16:44:14
19	I am aware that there was some -- some	16:44:18
20	research done, and there were some discussions	16:44:20
21	happening in -- in the 2012 and 2013 time period;	16:44:23
22	but exactly, you know, when this was -- was --	16:44:28
23	began to be discussed is hard for me to say with	16:44:36
24	specificity.	16:44:38
25	Q. And then Graph API Version 2 became	16:44:39

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1	operative when?	16:44:43
2	A. Graph API Version 2 was made broadly	16:44:48
3	available on April the 30th, 2015 -- sorry,	16:44:53
4	April the 30th, 2014.	16:44:56
5	Q. Okay. So during the time that Facebook	16:44:58
6	users expressed some concern -- you think sometime	16:45:03
7	starting in around 2012 -- and those concerns	16:45:06
8	were -- or were those concerns addressed in	16:45:09
9	Graph API Version 2?	16:45:13
10	A. API Version 2 contained a number of	16:45:20
11	changes designed to -- to satisfy some of those	16:45:22
12	concerns.	16:45:26
13	Q. And those changes were implemented in --	16:45:28
14	in 2015.	16:45:31
15	A. The -- API Version 2, you know, was	16:45:36
16	launched in -- on April 30, 2014, and the previous	16:45:41
17	versions of the API began to be deprecated -- began	16:45:44
18	to be deprecated in -- on April 30, 2015.	16:45:47
19	Q. I'm confident that all these questions	16:46:02
20	will make the more specific testimony a lot faster	16:46:05
21	because we have a basic understanding now of these	16:46:08
22	terms, so I appreciate your patience as we go	16:46:10
23	through. I have a few more questions that are	16:46:13
24	general in nature like this before we get	16:46:15
25	specifically into the topics and subtopics of the	16:46:19

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1	notice.	16:46:21
2	You testified that Facebook provided	16:46:22
3	access to Facebook user information to what we've	16:46:23
4	called "third parties" through APIs. Right?	16:46:26
5	A. The Facebook Developer Platform allowed	16:46:30
6	third parties to build applications that accessed	16:46:33
7	data on Facebook users via the Graph API or via a	16:46:38
8	set of APIs.	16:46:44
9	Q. And apps are one category of the third	16:46:47
10	parties that could access APIs on the Facebook	16:46:50
11	Platform?	16:46:54
12	A. Sorry. Can you -- this is one of the	16:47:00
13	things that -- to make sure we get right and	16:47:01
14	understand, can you specify -- just repeat the	16:47:04
15	question again?	16:47:06
16	And -- if you're referring to one of the	16:47:07
17	categories, could you help me understand what, in	16:47:10
18	your mind, is the other categories?	16:47:12
19	Q. Sure. I'm going to go through some	16:47:14
20	different categories. I'm trying to understand the	16:47:16
21	different entities that were allowed to use the --	16:47:18
22	the -- use APIs to access information.	16:47:21
23	And one of those -- and I'm calling them	16:47:23
24	"categories." If you have different terminology,	16:47:25
25	please tell me what it is.	16:47:27

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1	But one of the categories that could	16:47:29
2	access APIs was -- are referred to as "apps."	16:47:30
3	Right?	16:47:34
4	A. So in the context of the Facebook	16:47:36
5	Developer Platform, to access any information via	16:47:38
6	the API had to be done through a Facebook app ID;	16:47:43
7	through a Facebook application with a specific	16:47:47
8	Facebook app ID.	16:47:50
9	Q. Okay. So that brings me to my next	16:47:51
10	question, which is partners.	16:47:54
11	Facebook has what it refers to as	16:47:56
12	"partners." Correct?	16:47:58
13	A. I've heard -- I've seen the term "partner"	16:48:02
14	used. It refers to a wide range of relationships	16:48:05
15	between Facebook and its -- and various third	16:48:08
16	parties.	16:48:13
17	Q. Okay. And you were involved in the	16:48:14
18	partnerships group for four years or so at	16:48:16
19	Facebook?	16:48:19
20	A. I was -- I was involved in the	16:48:21
21	partnerships organization from September 2010 until	16:48:22
22	around January 2014.	16:48:25
23	Q. Okay. And what did the term	16:48:28
24	"partnerships" mean in that context?	16:48:30
25	A. In that context, "partnerships" refers to	16:48:33

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1	a range of relationships between Facebook and --	16:48:37
2	and third parties, ranging from informal to more	16:48:41
3	structured relationships governed by contracts.	16:48:48
4	Q. And with regard to those partnerships, was	16:48:51
5	Facebook providing access to user information	16:48:55
6	through APIs?	16:48:57
7	A. In the context of the Platform	16:49:00
8	Partnerships team, we typically -- the people on	16:49:02
9	the Platform Partnerships team would typically be	16:49:05
10	working with third parties that were using the	16:49:09
11	Facebook Platform in some way.	16:49:11
12	Q. Okay. And I think this is what I'm trying	16:49:13
13	to get at.	16:49:15
14	Are there entities that Facebook calls	16:49:16
15	"partners" that have access to Facebook user	16:49:17
16	information but do not have apps on the Platform?	16:49:21
17	A. In this specific -- in this context, I --	16:49:27
18	I am not aware of -- of -- in this specific	16:49:34
19	context, when we're talking about platform	16:49:39
20	partnerships, it's typically referring to entities	16:49:41
21	that use the Facebook Developer Platform, which	16:49:44
22	would typically be done by -- through an app ID,	16:49:47
23	but there were other features of the Facebook	16:49:51
24	Developer Platform that did not require you to use	16:49:53
25	an app ID.	16:49:56

```
 1        Q.  And, generally speaking, what were those        16:49:57

 2   features?                                                 16:49:59

 3        A.  One common set of examples was the social        16:50:02

 4   plug-ins, which a developer or an entity could            16:50:04

 5   embed on their own website, that didn't access the        16:50:09

 6   Facebook API -- sorry -- didn't access the                16:50:13

 7   Graph API.                                                16:50:19

 8        Q.  And how did those features provide access        16:50:20

 9   to Facebook user information?                             16:50:24

10
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17        Q.  And would Facebook obtain that                  16:50:53

18   information?                                              16:50:54

19        A.  To render a social plug-in, it would be         16:50:57

20   rendered by Facebook servers.                             16:50:59

21        Q.  Okay.  So that was a mechanism by which          16:51:02

22   Facebook obtained information about Facebook users        16:51:04

23   while they were off-platform?                             16:51:07

24        A.  The way the "Like" button worked was to         16:51:12

25   render -- if you visited a website that had the           16:51:15
```

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1	"Like" button embedded on it, then the Like button	16:51:17
2	would render. And in order to render it, Facebook	16:51:21
3	would receive a request from the user's web	16:51:24
4	browser.	16:51:29
5	Q. Okay. And that was not through an API;	16:51:29
6	that was through this other product.	16:51:31
7	A. The social plug-ins are a different way of	16:51:36
8	Facebook integrating information into third-party	16:51:40
9	contexts that users could access.	16:51:45
10	Q. And what is the time period that social	16:51:49
11	plug-ins have existed?	16:51:52
12	A. My understanding is that social plug-ins	16:51:55
13	were launched alongside the Graph API in	16:51:58
14	April 2010.	16:52:00
15	Q. And are they still active today?	16:52:03
16	A. I think there are some social plug-ins	16:52:06
17	still active today, although I'm not certain, and	16:52:09
18	that's something we can follow up on.	16:52:12
19	Q. And is there a tool that allows Facebook	16:52:15
20	to identify what social plug-ins exist and the time	16:52:17
21	period in which they've been active?	16:52:21
22	A. The Facebook code base, similar to my	16:52:25
23	previous answer, would allow you to -- would allow	16:52:29
24	someone to understand which social plug-ins have	16:52:31
25	existed over what period of time.	16:52:34

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1	Q. Are you familiar with the term	16:52:39
2	"integration partners"?	16:52:40
3	A. I've heard the phrase "integration	16:52:43
4	partners," yes.	16:52:46
5	Q. And what is an "integration partner"?	16:52:49
6	A. Again, can you help me understand in the	16:52:52
7	context in which you're asking the question?	16:52:54
8	Q. Sure. All of my questions are around	16:52:57
9	trying to understand how Facebook shares	16:52:59
10	information with what I'm calling "third parties,"	16:53:00
11	and my understanding is that integration partners	16:53:02
12	are an entity with which Facebook shares user	16:53:06
13	information.	16:53:08
14	So in that context.	16:53:08
15	A. My understanding of the term -- of	16:53:12
16	integration partners in that context is a set of	16:53:14
17	entities, third parties, that Facebook had a	16:53:19
18	relationship with to enable them to build	16:53:24
19	Facebook-like or -- Facebook-branded or	16:53:28
20	Facebook-like or feedback-branded experiences on	16:53:33
21	the third party's platforms and services.	16:53:37
22	Q. And so Facebook user information was	16:53:42
23	provided to integration partners. Right?	16:53:46
24	A. Typically, the way that an integration	16:53:52
25	partner application works is that the application	16:53:54

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1	was offered to users on that platform.	16:53:59
2	Users would choose to use that application	16:54:02
3	and, as a result of the user choosing to use the	16:54:05
4	application, information about -- information would	16:54:12
5	be shared -- that the user had granted access to	16:54:17
6	would be shared with the third party in order for	16:54:22
7	them to provide the experience for a user.	16:54:24
8	Q. And do integration partners have apps on	16:54:28
9	the Facebook Platform?	16:54:31
10	A. The way that you would -- a developer	16:54:34
11	would interact with the Facebook APIs would be	16:54:38
12	through an app ID, which is what I'm referring to	16:54:42
13	as an "application" in this specific context.	16:54:47
14	Q. Okay. And, again, I'm just -- I want to	16:54:50
15	make sure I understand.	16:54:53
16	So in order to create that Facebook	16:54:54
17	experience on a phone, would the information	16:54:56
18	necessary to create that experience be communicated	16:55:03
19	to that phone company via the Graph API or through	16:55:06
20	some other mechanism?	16:55:12
21	A. To build one of these integration partner	16:55:16
22	experiences, the information would be made	16:55:19
23	available through the Graph API; but, typically,	16:55:22
24	the information would be accessed from the device	16:55:27
25	itself that the user was using.	16:55:32

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1	Q. Okay. So not through an app on the	16:55:36
2	Facebook Platform.	16:55:38
3	A. This is where we need to make sure we're	16:55:42
4	using the specific terms.	16:55:44
5	The way you access the Facebook set of	16:55:47
6	APIs, the Facebook Platform, is through an entity	16:55:49
7	called a "Facebook app ID" or a "Facebook app,"	16:55:52
8	which has an app ID. That identifies -- that	16:55:55
9	allows the owner of the app to make calls against	16:56:00
10	the Facebook APIs.	16:56:03
11	So, in that context, that's very	16:56:06
12	specifically what I'm referring to as a "Facebook	16:56:09
13	app."	16:56:10
14	Q. Okay. And is there anything -- And,	16:56:13
15	again, this clarification is really helpful.	16:56:16
16	In thinking about how integration partners	16:56:21
17	get information about Facebook users, is there	16:56:23
18	anything different about that system than the way a	16:56:26
19	normal app developer gets information about users?	16:56:28
20	A. On a technical level, the way that the	16:56:34
21	information is exchanged would have been done	16:56:37
22	through the Graph API, which is the standard way to	16:56:39
23	access -- that users would give their information	16:56:44
24	to apps and third parties.	16:56:50
25	So, at a technical level, the mechanism of	16:56:55

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1	information interchange is the same, but an	16:56:59
2	integration partner would be -- would be billing,	16:57:03
3	typically, a different kind of experience than a	16:57:06
4	regular Facebook Platform developer.	16:57:09
5	Q. And that experience was different because	16:57:14
6	one is on the Platform, the Facebook Platform, and	16:57:17
7	the other is on the integration partner's device?	16:57:20
8	A. So this -- again, this is for me to get	16:57:27
9	very specific about.	16:57:31
10	In the context of the Facebook Platform,	16:57:32
11	there is a concept of a feedback app, which is the	16:57:34
12	entity that determines the -- how the information	16:57:38
13	is accessed, what permissions have been granted by	16:57:42
14	users, and so on.	16:57:45
15	What developers build are often also	16:57:47
16	called "apps," and, like, that's a -- that's a	16:57:50
17	different concept.	16:57:56
18	The application that a third-party	16:57:58
19	developer would build might run on their web	16:58:01
20	server. It might run on their hardware. It might	16:58:05
21	run on a user's physical device.	16:58:08
22	And so these are distinct concepts which	16:58:12
23	are important to -- to separate.	16:58:15
24	Q. Does Facebook have a term for -- for users	16:58:19
25	that interact with integration partners, or are	16:58:23

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1	they called "integration users," or is there some	16:58:27
2	terminology that applies to that?	16:58:30
3	A. I'm not aware of distinct terminology that	16:58:32
4	would be different. These are just users.	16:58:35
5	Q. And before, you mentioned that a user	16:58:42
6	authorizes the integration partner to obtain	16:58:45
7	information when the user interacts with that --	16:58:47
8	let's call it -- again, let's call it a phone, a	16:58:52
9	mobile phone. Is that right?	16:58:57
10	A. When a -- a good -- I think the easiest	16:59:00
11	way to answer this question is with an example.	16:59:04
12	So one good example here would be a	16:59:07
13	██████████████████████████████	████
14	platform.	16:59:15
15	The user -- a user would typically have a	16:59:17
16	██████████████████████████████	████
17	There would be a Facebook-branded app available on	16:59:24
18	that device. The user would choose to log in to	16:59:29
19	the application and, as a result of doing that,	16:59:32
20	██████████████████████████████	████
21	device the ability to access that information that	16:59:40
22	that user would have had access to on Facebook on	16:59:46
23	the app built onto the -- the Facebook-branded	16:59:49
24	██████████████████████████████	████
25	were using.	16:59:59

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1	Q. Okay. And in that example, the user	17:00:00
2	authorizes access to the Facebook user's	17:00:03
3	information. Correct?	17:00:06
4	A. When I -- if a user chooses to use the	17:00:09
5	Facebook-branded application on a BlackBerry	17:00:14
6	device, they are logging in on -- to that	17:00:17
7	application; and, as a result, the application has	17:00:22
8	access to some of the information that that user	17:00:24
9	would be able to see on Facebook.	17:00:26
10	Q. And that information that that company	17:00:29
11	would have access to would include information	17:00:33
12	about the user's friends. Right?	17:00:36
13	A. In the specific example I was just talking	17:00:40
14	about here, this would be a Facebook-branded	17:00:42
15	application; a Facebook-branded product running on	17:00:46
16	████████████████████████	██████
	████████████████████	██████
	████████████████████████████	██████
	██████████████████████████	██████
	████████████████████████	██████
	████████	██████
22	Q. And that would -- among other types of	17:01:08
23	information that would be made available in that	17:01:12
24	example, friends information would be made	17:01:14
25	available. Right?	17:01:17

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1	A. Typically, a user would expect when	17:01:18
2	they're using a Facebook-branded experience to see	17:01:20
3	information about their friends and what their	17:01:26
4	friends had been doing.	17:01:28
5	Q. And so the answer is yes?	17:01:30
6	A. If I'm using a Facebook-branded	17:01:34
7	application on a BlackBerry device, I would expect	17:01:37
8	to see information about my friend, yes.	17:01:40
9	Q. And in that example, the friends are not	17:01:42
10	the ones who authorized BlackBerry to obtain that	17:01:45
11	information. Right?	17:01:50
12	A. The user is using a BlackBerry application	17:01:51
13	on the BlackBerry device, and the user has	17:01:54
14	authorized that application to access Facebook's	17:01:57
15	APIs in order to render a Facebook experience on	17:02:01
16	that device.	17:02:05
17	Q. So the answer to my question is, correct,	17:02:06
18	the friends did not authorize BlackBerry's access	17:02:11
19	to their information?	17:02:14
20	A. One of my friends may have also had a	17:02:16
21	BlackBerry device and may have logged in to the	17:02:19
22	Facebook-branded experience on that device.	17:02:22
23	Where I have -- I'm using Facebook -- the	17:02:27
24	Facebook-branded experience on my BlackBerry	17:02:31
25	device, then I am receiving -- I would be seeing	17:02:34

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1	data on my phone that was from my friends that may	17:02:37
2	not have been using BlackBerry.	17:02:43
3	Q. So, again, to answer the question, when	17:02:50
4	BlackBerry obtained friend information, that friend	17:02:52
5	information would include the information of people	17:02:56
6	who did not themselves use the BlackBerry device.	17:02:59
7	A. I'm trying to -- I'm trying to	17:03:04
8	understand --	17:03:05
9	Q. I -- like --	17:03:06
10	A. Sorry.	17:03:08
11	Q. Sorry. Go ahead. I apologize for	17:03:09
12	interrupting.	17:03:10
13	A. I -- I'm trying to work through the	17:03:12
14	specific example and explain the -- you know, how	17:03:16
15	these things, you know, worked from a user level	17:03:18
16	and a technical level.	17:03:22
17	In this case, you know, it's a -- it's a	17:03:24
18	set of code that happened to be written by	17:03:27
19	engineers at BlackBerry that ran on a user's	17:03:31
20	device, and it was that code that would have been	17:03:36
21	accessing -- typically, in that case -- accessing	17:03:38
22	the Facebook API.	17:03:41
23	Q. Right. As you said, as you explained in	17:03:44
24	more detail, when a user authorizes BlackBerry to	17:03:46
25	obtain the information, some of those user's	17:03:49

1	friends may also have authorized BlackBerry.	17:03:53
2	And in that situation, both of those	17:03:56
3	people had authorized BlackBerry to obtain their	17:03:58
4	information. Right?	17:04:01
5	A. It's possible that -- yes, I would have	17:04:03
6	had -- I might have used -- I never actually had a	17:04:07
7	████████████████████████████████	██████
	████████████████████████████	██████
	████████████████████████	██████
	████████████████████ ██	██████
	████████████████████████████	██████
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	████████████████████████████	██████
	██████████████████████	██████
	██████████████████████	██████
17	application on their BlackBerry device.	17:04:39
18	MR. LOESER: Okay. Thank you.	17:04:41
19	Mr. Blume, we have been going for a bit,	17:04:43
20	and we're about to transition into another area.	17:04:46
21	If now would be a time you would want to	17:04:49
22	take a break, that would be fine with me, or we can	17:04:51
23	keep rolling.	17:04:54
24	MR. BLUME: Now would be great. Thank you	17:04:55
25	very much.	17:04:57

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1	THE VIDEO OPERATOR: Okay. And we're off	17:04:58
2	the record. It's 5:04 P.M.	17:04:59
3	(Recess from 5:04 P.M. to 5:22 P.M.)	17:21:36
4	(Mr. Melamed joined the deposition.)	17:22:59
5	THE VIDEO OPERATOR: We're back on the	17:23:01
6	record. It's 5:22 P.M.	17:23:01
7	BY MR. LOESER:	17:23:03
8	Q. I'm not sure whether to say good morning	17:23:05
9	or good afternoon, but still morning here and late	17:23:07
10	afternoon for you, so whichever.	17:23:10
11	Welcome back.	17:23:12
12	And a few other questions I realized	17:23:15
13	before we get into the notice itself, and I'm going	17:23:17
14	to ask you about a term I've seen in some Facebook	17:23:21
15	documents called "nonapp user-sharing."	17:23:24
16	Is that a term that you're familiar with?	17:23:28
17	A. I'm not familiar with the term "nonapp	17:23:33
18	user-sharing" specifically, no.	17:23:36
19	Q. Okay. Let me try and dig in a bit and see	17:23:39
20	if we can figure it out.	17:23:42
21	In addition to user information and users'	17:23:44
22	friends' information, Facebook at times provided	17:23:50
23	third parties access to information from people who	17:23:53
24	are not friends with the user. Is that correct?	17:23:55
25	A. I think my -- sorry.	17:24:03

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1	Repeat that again. The specifics matter,	17:24:05
2	yeah.	17:24:07
3	Q. Yeah. So let me give you an example, and	17:24:09
4	you can -- and maybe what I said makes more sense.	17:24:12
5	Are you familiar with the Events API?	17:24:16
6	A. I am familiar with the Events API.	17:24:21
7	Q. And what is the "Events API"?	17:24:23
8	A. The Events API, as I understand it, refers	17:24:26
9	to a set of APIs that would be used by a Facebook	17:24:29
10	Platform application to access the events that a	17:24:35
11	user of the application was attending or had been	17:24:40
12	invited to attend, for example, or had attended in	17:24:47
13	the past, and -- yeah. I think that's -- that's a	17:24:52
14	high-level explanation.	17:25:00

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1	████████████████████████████	████████
	█ ███████	████████
	█ ████ █ ███████████████████	████████
4	that described as "providing access to nonapp-user	17:25:41
5	information"?	17:25:46
6	A. I don't recall seeing it described as	17:25:53
7	that, but that -- that term seems like a reasonable	17:25:55
8	one to use in that context.	17:26:02
9	Q. Let's go back to Exhibit 330 and to	17:26:09
10	page 13, which was the -- and we're going to post	17:26:15
11	all the exhibits on the screen so if it's easier	17:26:21
12	for you to look that way, you can do that.	17:26:23
13	And while we're getting there, I am going	17:26:38
14	to read Topic 6, which is one of the topics for	17:26:40
15	which you have been designated to testify.	17:26:43
16	It is:	17:26:46
17	"The development of friend-sharing,	17:26:46
18	including but not limited to: its purpose	17:26:48
19	and identification of those involved in its	17:26:50
20	development; how the technology functioned;	17:26:52
21	the APIs and permissions associated with	17:26:55
22	friend-sharing; the communication of this	17:26:59
23	technology to users, including the drafting	17:27:01
24	of Facebook's Terms of Service, SRR, and Data	17:27:04
25	and Privacy Policies relating to	17:27:09

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1	friend-sharing; and the revenue impact and	17:27:11
2	net profits for Facebook relating to	17:27:15
3	friend-sharing throughout the Class Period."	17:27:16
4	Did I read that correctly?	17:27:19
5	A. You read that correctly.	17:27:21
6	Q. And my understanding from communications	17:27:23
7	from your counsel is that you have not prepared or	17:27:26
8	been prepared to testify about the following	17:27:30
9	clause:	17:27:34
10	"...the communication of this technology	17:27:35
11	to users, including the drafting of	17:27:36
12	Facebook's Terms of Service, SRR, and Data	17:27:39
13	and Privacy Policies relating to	17:27:43
14	friend-sharing."	17:27:44
15	Is that correct?	17:27:46
16	A. That's correct with my understanding, yes.	17:27:47
17	Q. And, sir, over the course of your	17:27:50
18	employment at Facebook, have you developed personal	17:27:51
19	knowledge of the topic I just read?	17:27:54
20	A. My personal knowledge would cover that to	17:28:03
21	some degree, yes.	17:28:05
22	Q. Mr. Cross, tell me what you did to prepare	17:28:07
23	to testify regarding Topic 6.	17:28:11
24	A. I spoke to a number of people inside the	17:28:16
25	company. I reviewed the documents that have been	17:28:18

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1	produced in this case, both some documents that my	17:28:25
2	legal team shared with me and the documents that	17:28:30
3	you have shared with me.	17:28:34
4	I also spent some time looking at the	17:28:36
5	Facebook developer website as it was in the past to	17:28:39
6	understand how -- how the platform originally	17:28:45
7	worked would refresh my memory.	17:28:50
8	Q. And as to the statement you just made,	17:28:54
9	where did you go to find how the Developer Platform	17:28:57
10	existed in the past?	17:29:02
11	A. I used the Wayback Machine, otherwise	17:29:05
12	known as archive.org, I think, is its address.	17:29:12
13	Q. Okay. So you didn't use any system or	17:29:17
14	tool within the Facebook structure.	17:29:20
15	A. Not to access the previous versions of the	17:29:24
16	Facebook developer website, no.	17:29:26
17	Q. And I asked you about whether you had	17:29:30
18	personal knowledge of the communication subtopic.	17:29:32
19	With regard to the remainder of the topics	17:29:36
20	covered by Topic 6, over the course of your	17:29:38
21	employment, did you develop personal knowledge of	17:29:41
22	those topics as well?	17:29:43
23	A. Given my involvement in this product area,	17:29:47
24	I did develop personal knowledge of how these	17:29:50
25	things worked.	17:29:54

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1	Q. And is there any component of this notice	17:29:56
2	that is a topic that the sole source of your	17:29:58
3	knowledge is the preparation you did for this	17:30:03
4	deposition?	17:30:06
5	A. Give me a second just to read the terms	17:30:10
6	again.	17:30:15
7	(Reviewing document.)	17:30:19
8	THE WITNESS: And your question was the --	17:30:26
9	the -- in preparing -- sorry.	17:30:29
10	Just repeat your question again.	17:30:31
11	Is it the sole thing is my personal	17:30:33
12	experience, or the sole thing is not my personal	17:30:36
13	experience?	17:30:38
14	BY MR. LOESER:	17:30:39
15	Q. Not your personal experience.	17:30:39
16	I'm trying to find out if there's any	17:30:40
17	aspect of this that you only know about because of	17:30:43
18	the preparations that you did for this deposition	17:30:45
19	today.	17:30:47
20	A. Of those, the -- the revenue impact and	17:30:49
21	net profits is an area that I was not closely	17:30:51
22	involved in at the time. And so in trying to	17:30:54
23	answer your forthcoming questions on that topic,	17:30:59
24	I'll be primarily, if not exclusively, relying on	17:31:04
25	the preparation I've done and the documents I've	17:31:07

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1	read.	17:31:09
2	Q. And for that particular issue, what	17:31:11
3	preparation did you do?	17:31:15
4	A. I reviewed a set of documents that had	17:31:18
5	been produced in this -- in this case, and I asked	17:31:21
6	some of the people that I spoke to in preparation	17:31:25
7	what their recollection was around assessments of	17:31:30
8	revenue impact and net profits.	17:31:34
9	Q. And who were the people that you spoke to	17:31:38
10	on that topic?	17:31:41
11	A. I would have spoken to Eddie O'Neil,	17:31:45
12	Ime Archibong, and -- I'm trying to remember who I	17:31:52
13	spoke to about what -- and I think Francisco	17:32:01
14	Varela.	17:32:14
15	Q. Mr. Cross, based on your preparation with	17:32:21
16	regard to Topic 6, do you believe you are	17:32:25
17	reasonably educated to testify on these matters,	17:32:28
18	with the one caveat of the communication piece?	17:32:31
19	A. I've done my best to be prepared to	17:32:34
20	testify on these matters, yes.	17:32:36
21	Q. Okay. So do you believe you are	17:32:37
22	reasonably educated to testify on these matters?	17:32:39
23	A. I believe I'm reasonably educated to	17:32:43
24	testify on these matters.	17:32:46
25	Q. And do you agree that the notice concerns	17:32:47

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1	information that is known or reasonably available	17:32:50
2	to Facebook?	17:32:53
3	A. That matches my understanding; yes, known	17:32:56
4	or reasonably available to Facebook.	17:33:02
5	Q. So let's look more at Topic 6.	17:33:05
6	And this topic, obviously, concerns	17:33:08
7	friend-sharing. Right?	17:33:16
8	A. The topic concerns the development of	17:33:19
9	friend-sharing, as I understand it, yes.	17:33:22
10	Q. And tell me: What was the purpose of	17:33:24
11	friend-sharing for Facebook?	17:33:26
12	A. To help me answer that, can you define for	17:33:30
13	me what you think you mean by the phrase	17:33:32
14	"friend-sharing"?	17:33:34
15	Q. That is an excellent question, and so let	17:33:35
16	me ask you:	17:33:38
17	How does Facebook -- what does Facebook	17:33:40
18	mean by the term "friend-sharing"?	17:33:42
19	A. In this context, my understanding of the	17:33:47
20	phrase "friend-sharing" is where a Facebook	17:33:51
21	application would be able to access some	17:33:54
22	information about an app user's friends that hadn't	17:33:58
23	necessarily explicitly used that application.	17:34:04
24	Q. And can we expand the definition to also	17:34:11
25	cover the context in which private APIs are used to	17:34:14

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1	give access to friend information, or would that be	17:34:19
2	covered by what you said?	17:34:24
3	A. It's hard to answer that question given	17:34:30
4	the -- the definition of "private API" being a wide	17:34:31
5	range of things would be classified or classifiable	17:34:37
6	as private APIs; many not limited -- or not	17:34:40
7	involving friend-sharing in any way.	17:34:46
8	Q. And I appreciate that, and so I'm asking	17:34:48
9	specifically about private APIs that provided	17:34:51
10	access to friend-sharing information.	17:34:54
11	I mean, I guess I should ask: Private	17:35:01
12	APIs did, in fact, for some partners provide access	17:35:03
13	to friend information. Right?	17:35:06
14	A. There were some partners who had access to	17:35:12
15	information that users had authorized the	17:35:18
16	application to access that included friend	17:35:23
17	information.	17:35:29
18	Q. Okay. And so when I use the phrase	17:35:30
19	"friend-sharing" for purposes of this deposition, I	17:35:33
20	intend to mean any friend-sharing, when it was via	17:35:35
21	private APIs or otherwise via APIs on the Platform.	17:35:40
22	Is that fair?	17:35:46
23	A. I think we should -- I'll try and call out	17:35:49
24	where that distinction is important because there's	17:35:52
25	a number of different ways in this -- that these	17:35:56

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1	things worked.	17:36:00
2	I understand your -- your initial	17:36:01
3	understanding of -- I refer back to my definition	17:36:04
4	of "friend-sharing," and I will try and -- I will	17:36:08
5	try and call out where I see a distinction between	17:36:12
6	friend-sharing as it was available to regular,	17:36:16
7	nonwhitelisted developers and via private APIs.	17:36:21
8	Q. I appreciate that. And I have some	17:36:28
9	questions, too, that separate along those lines, so	17:36:29
10	I think that will work quite well.	17:36:32
11	And I asked you what the purpose of	17:36:34
12	"friend-sharing" was.	17:36:35
13	So with that definition of	17:36:37
14	"friend-sharing," can you describe what the purpose	17:36:37
15	was?	17:36:39
16	A. Friend-sharing was an inherent part of the	17:36:42
17	Facebook Platform as it was built, starting in	17:36:47
18	2007, to allow app developers to build engaging	17:36:50
19	social experiences.	17:36:55
20	In many cases, a user would be the first	17:37:02
21	person to -- they know to authorize an application,	17:37:05
22	and in order for that application to build an	17:37:12
23	engaging social experience, the application would	17:37:14
24	have access to a subset of the information that	17:37:18
25	that user could see on Facebook.	17:37:23

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1	The original premise of the Facebook	17:37:26
2	Platform is the -- the app that a user was	17:37:28
3	authorizing would be able to see things that they	17:37:34
4	could also see on Facebook.	17:37:39
5	Q. And who came up with the idea of	17:37:43
6	friend-sharing?	17:37:45
7	Is there a particular person?	17:37:46
8	A. I don't know. We -- I don't know the	17:37:49
9	specific name of the person who came up with	17:37:54
10	friend-sharing.	17:37:56
11	The ability to access information about	17:37:57
12	the friends of a person using an application was,	17:38:04
13	as I understand it, part of the Facebook Developer	17:38:10
14	Platform from its inception; and so the people	17:38:12
15	involved in developing the Facebook Platform would	17:38:15
16	have been the people determining how it operated.	17:38:17
17	Q. And was Mark Zuckerberg involved in the	17:38:23
18	development of the platform?	17:38:27
19	A. There were a number of people involved in	17:38:31
20	the development of the platform circa 2007, when it	17:38:33
21	was launched. I imagine Mark was aware that this	17:38:36
22	platform was launching. I don't know how much he	17:38:41
23	was involved in the development of the platform.	17:38:45
24	Q. And do you know if Mark Zuckerberg had	17:38:49
25	anything to say one way or the other about whether	17:38:55

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1	friend-sharing should be part of the platform at	17:38:57
2	its outset?	17:38:59
3	A. I have not seen any documents or	17:39:01
4	communication that would indicate how the decisions	17:39:04
5	as to how the platform was designed were -- were	17:39:11
6	come to.	17:39:14
7	Q. And would you agree that the	17:39:17
8	friend-sharing APIs provided a significant amount	17:39:21
9	of information about users to app developers?	17:39:27
10	A. Can you help me understand what you mean	17:39:33
11	by the "friend-sharing APIs"?	17:39:34
12	That's not a term I'm familiar with.	17:39:36
13	Q. Well, what is the term you use to describe	17:39:38
14	the different APIs that provided for access to	17:39:40
15	friend information?	17:39:44
16	A. They would just be called the "APIs." The	17:39:48
17	Likes API, for example, would be one. And then	17:39:52
18	that API could be called in a number of different	17:39:57
19	contexts.	17:40:00
20	Q. And weren't there a number of APIs that	17:40:01
21	had the word "friends" in them?	17:40:04
22	A. There were a number of permissions that	17:40:08
23	had the words "friends" in them. There may have	17:40:10
24	been some APIs with the word "friends" in, but I --	17:40:14
25	again, the difference between APIs and permissions	17:40:18

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1	is an important concept to draw.	17:40:21
2	Q. Okay. Well, let's talk about permissions,	17:40:24
3	then.	17:40:26
4	So when I've seen lists of what I've been	17:40:27
5	referring to as "APIs" that say "friends video	17:40:30
6	watch" or "friends posts" or "friends whatever,"	17:40:33
7	I've been -- I think of those as APIs.	17:40:36
8	But you're telling me I should think of	17:40:39
9	those as permissions.	17:40:42
10	A. There's a -- in Graph API Version 1, there	17:40:44
11	was a specific set of permissions that were	17:40:47
12	referred to as the "friends permissions."	17:40:50
13	And I think that's the most proper way to	17:40:53
14	refer to them.	17:40:57
15	Q. And were friends permissions widely used	17:40:59
16	permissions prior to the implementation of	17:41:03
17	Graph API Version 2?	17:41:06
18	A. Can you help me understand what you mean	17:41:09
19	by "widely used"?	17:41:10
20	Q. Well, what does that term just naturally	17:41:13
21	mean to you?	17:41:17
22	A. It could mean a number of different	17:41:18
23	things. It could mean whether or not they were	17:41:20
24	frequently asked by applications; regularly granted	17:41:23
25	by users.	17:41:31

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1	Hard to answer without the specifics.	17:41:32
2	Q. Well, let's start with frequently called	17:41:34
3	by applications.	17:41:36
4	Were friends permissions frequently called	17:41:40
5	by applications?	17:41:42
6	██ ██████████████████ ██████	
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12	Q. And -- but a tremendous volume of user	17:42:04
13	data was made accessible through friends	17:42:08
14	permissions, wouldn't you say?	17:42:11
15	A. I am not sure what you mean by	17:42:14
16	"tremendous."	17:42:15
17	The friend permissions allowed	17:42:17
18	applications on the Facebook Platform to access	17:42:20
19	information about an app user's friends.	17:42:22
20	Q. And Facebook was concerned about the	17:42:25
21	amount of information that was made available via	17:42:27
22	the friends permissions. Correct?	17:42:30
23	A. There were discussions internally about	17:42:34
24	how the friend permissions were being used by	17:42:38
25	applications.	17:42:42

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1	MR. LOESER: Why don't we put up an	17:42:53
2	exhibit. And -- Tab 4, which would be 331 now?	17:42:54
3	332. All right. We're going to mark	17:43:03
4	Exhibit 332.	17:43:06
5	(Deposition Exhibit 332 was marked for	17:43:07
6	identification.)	17:43:09
7	BY MR. LOESER:	17:43:12
8	Q. And over the course of the day, I'm going	17:43:12
9	to be referring to "tabs." That's really just for	17:43:15
10	our benefit over here. A document will magically	17:43:18
11	appear on your screen that are tabs for me but are	17:43:21
12	Bates numbers for you. So -- and exhibit numbers.	17:43:25
13	This is a slipcover sheet which is not the	17:43:34
14	document itself that has the metadata for the	17:43:37
15	document.	17:43:39
16	So if we can go to the next page of the	17:43:40
17	document, I'm showing you an email from the name	17:43:42
18	that we can't say that we have agreed to call "KP"	17:43:45
19	to a number of people, including Allison Hendrix,	17:43:50
20	dated September 27, 2013.	17:43:54
21	Is that the document that's in front of	17:43:57
22	you?	17:44:00
23	A. That's the document I see, yes.	17:44:01
24	Q. And can you look at the first paragraph,	17:44:09
25	the first full paragraph of that document?	17:44:11

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| 1 | A. Yep. | 17:44:16 |
| 2 | Q. And KP writes: | 17:44:17 |

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 3   ████████████████████████████████         ██████████

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12	A. You missed the word "data" between	17:44:44
13	"identity" and "required," I think, but other than	17:44:46
14	that, you got --	17:44:48
15	Q. Thank you.	17:44:49
16	And do you understand what "identity data"	17:44:50
17	is?	17:44:52
18	A. It's hard for me here to be -- to know	17:44:56
19	specifically what he's referring to, but -- yeah,	17:44:59
20	so it's hard for me to know explicitly what he is	17:45:06
21	referring to.	17:45:09
22	In my personal capacity, I would	17:45:09
23	understand that to mean -- no, I'm not sure I could	17:45:13
24	conclusively say what he's referring to by	17:45:24
25	"identity data."	17:45:26

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1	Q. Could it be information about Facebook	17:45:28
2	users?	17:45:30
3	Does that seem like a reasonable	17:45:31
4	interpretation of that phrase?	17:45:32
5	A. Looking at the API call here, this	17:45:35
6	would -- my understanding is this is referring to	17:45:40
7	the number of requests to a user ID, like a user --	17:45:43
8	the user -- what we would call the "user method" of	17:45:49
9	the Graph API.	17:45:52

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21   A.   "MAUs" means monthly active users.   17:48:21

22 ██ ████████████████ ████████

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4   Is that what that says?   17:48:47

5   A.   That's what I read from the document.   17:48:48

6   Q.   So there were 138 times more requests than 17:48:51

7 there were users in the last 30 days.   17:48:55

8   A.   I can't do the math in my head, but I   17:49:00

9 understand --   17:49:03

10   Q.   He has it -- yeah, sorry to interrupt, but 17:49:04

11 the math is there. It says "138X." Right?   17:49:07

12   A.   I see "138S" on the page, yeah.   17:49:10

13   Q.   You're saying that you're not sure his   17:49:13

14 math is right, but -- right?   17:49:14

15   A.   Yeah, I'm not doing a -- I'm not doing the 17:49:17

16 math in my head. I'm just reading the numbers off   17:49:19

17 the page.   17:49:22

18   Q.   And what does it suggest to Facebook if -- 17:49:22

19 if there are 138 times as many requests for   17:49:26

20 identity data than there are monthly active users?   17:49:31

21   A.   It might suggest that the app was not very 17:49:37

22 efficiently developed.   17:49:40

23   Q.   Might it also suggest that the app was   17:49:43

24 obtaining information in ways that weren't related   17:49:45

25 to the use case for the app?   17:49:51

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1	A. It might mean that the app was making	17:49:56
2	requests for user data. It doesn't necessarily	17:49:59
3	indicate that that's inappropriate given the use	17:50:02
4	case of the app.	17:50:08

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4   Q.   And for Facebook, is that considered   17:51:31

5   somewhat of a red flag?   17:51:33

6   A.   I think there's a number of reasons why   17:51:39

7   Facebook might be interested in how applications   17:51:41

8   are calling the API.   17:51:43

9   One example might be that if the app is   17:51:45

10   developed inefficiently, then there is an impact on   17:51:50

11   Facebook's ability to serve those requests 'cause   17:51:54

12   every time the API is called, a lot of code has to   17:51:57

13   be run.   17:52:01

14   Q.   And do you think that's what KP was   17:52:04

15   sending this email about?   17:52:08

16   A.   I'm not -- there's no reference here as to   17:52:13

17   exactly what -- whether or not that was a reason   17:52:15

18   that KP was sending this email.   17:52:19

19   ████████████████████████████   ██████

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1 ███████████████████████████   ██████████

2   A.   From this email, it's hard to know   17:52:58

3   specifically what the issue was. I -- I was not on   17:53:00

4   this email thread in a personal capacity, and I was   17:53:05

5   unable to talk to KP about what he meant because   17:53:11

6   he's no longer at the company.   17:53:15

7   Q.   And in stepping away from this email, was   17:53:19

8   Facebook aware that friends permissions were often   17:53:23

9   called by apps in ways that exceeded the use case   17:53:29

10   for the app?   17:53:35

11   A.   At the time there was a number of   17:53:40

12   discussions about how apps were using the   17:53:41

13   information they got via the API. One of those   17:53:46

14   reasons would have been that there were some   17:53:53

15   questions about how that information was being   17:53:58

16   used.   17:54:00

17   Q.   And what's the time frame you're referring   17:54:02

18   to in your answer?   17:54:04

19   A.   My answer here, I'm referring to around   17:54:08

20   2013, the -- roughly when I have reviewed documents   17:54:12

21   about this time, where there was a number of   17:54:15

22   discussions taking place about how apps were using   17:54:18

23   the Facebook Developer Platform and which   17:54:23

24   particular APIs and permissions they were using.   17:54:27

25   Q.   The way friend-sharing was set up, a   17:54:33

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1	Facebook user decided whether an app or integration	17:54:35
2	partner got access to the user's friend data.	17:54:39
3	Right?	17:54:43
4	A. The way the Facebook Platform worked is	17:54:44
5	that users would authorize an application to access	17:54:46
6	their information. They could also, in API	17:54:49
7	Version 1 and before, grant the application access	17:54:56
8	to information about -- some information about that	17:54:58
9	user's friends who had not -- who were not	17:55:05
10	necessarily using the application.	17:55:07
11	Q. Okay. And on an app-by-app basis, the	17:55:09
12	friends themselves did not have a say in whether	17:55:16
13	their information was made available to the app	17:55:19
14	that their friend used. Right?	17:55:20
15	A. My understanding is that developers --	17:55:24
16	users could opt out of the Facebook Developer	17:55:27
17	Platform, and that would prevent their information	17:55:29
18	being shared with most third parties.	17:55:33
19	Q. Okay. And that -- and let me make sure I	17:55:37
20	understand your testimony.	17:55:41
21	The only way to stop your friends from	17:55:43
22	sharing your information with an app was to turn	17:55:45
23	off apps altogether on the Platform. Is that	17:55:47
24	right?	17:55:49
25	A. The controls available to users changed	17:55:54

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1	over time. For a period, there was a way for users	17:55:57
2	to access a setting -- an area of settings called	17:56:04
3	"Apps Others Use" -- I think I'm getting that	17:56:08
4	right -- which allowed them to control which	17:56:11
5	subsets of their information were available to	17:56:14
6	applications via the friend permissions.	17:56:19
7	Q. And what period was that choice available?	17:56:22
8	A. I don't know specifically when that --	17:56:31
9	those settings were made available or were removed.	17:56:33
10	It was certainly available, as I understand it, in	17:56:37
11	around 2014.	17:56:40
12	Q. And why was that choice taken away from	17:56:48
13	users?	17:56:51
14	A. My understanding is that that area of	17:56:52
15	settings was removed when there were no or few	17:56:54
16	third-party applications that had access to that	17:57:04
17	information via the APIs.	17:57:08
18	Q. And do you have an understanding -- or	17:57:15
19	what is Facebook -- well, strike that.	17:57:16
20	What was the time period for which the	17:57:18
21	only way to stop your friends from sharing	17:57:20
22	information was to turn off apps altogether on the	17:57:23
23	Platform?	17:57:25
24	A. To answer that question, I'd need to know	17:57:29
25	exactly when the Apps Others Use setting was	17:57:31

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1	introduced, which is a date I don't have, I'm	17:57:36
2	afraid.	17:57:38
3	Q. Okay. And will you follow up and provide	17:57:39
4	that information?	17:57:41
5	You would provide it to your counsel, who	17:57:46
6	can provide it to us.	17:57:47
7	A. I'm sure we could try and attempt to	17:57:49
8	follow up on determining when those settings	17:57:51
9	were -- were introduced.	17:57:54
10	Q. And where would you go to search for the	17:57:57
11	answer to that question?	17:57:59
12	A. My immediate step would be to ask the	17:58:08
13	engineers who had worked on that feature or may	17:58:10
14	have worked on that feature to try and identify	17:58:15
15	when that feature was made available.	17:58:20
16	Q. Thank you. During the time that the only	17:58:27
17	way to turn off -- or to block your friend from	17:58:29
18	sharing your information was by turning off apps	17:58:33
19	altogether, can you explain why friend-sharing was	17:58:37
20	set up that way?	17:58:41
21	A. The original design of the Facebook	17:58:45
22	Platform rested on a very simple premise, which is	17:58:47
23	that the user has access to information by using	17:58:54
24	Facebook, and the user could allow apps to access	17:58:58
25	the information that they could see on Facebook,	17:59:04

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1	and that would allow those applications to build	17:59:06
2	rich, engaging social experiences.	17:59:11
3	That was the simple, clear, founding	17:59:14
4	premise of the Facebook Developer Platform.	17:59:18
5	Q. From your testimony, it sounds like, just	17:59:22
6	from a technical standpoint, it is possible for	17:59:25
7	Facebook to provide a setting through which, on an	17:59:27
8	app-by-app basis, Facebook users can determine	17:59:32
9	whether their friends share their information.	17:59:37
10	Right?	17:59:44
11	A. The testimony I think you're referring to	17:59:44
12	from a few minutes ago refers to a set of settings	17:59:46
13	called "Apps Others Use," which allowed users to	17:59:50
14	opt out of certain types of their information being	17:59:55
15	shared with any apps their friend used.	17:59:59
16	My understanding is that was not an	18:00:03
17	app-by-app setting.	18:00:05
18	Q. Okay. I want to make sure I understand	18:00:10
19	that.	18:00:13
20	So was there any time when a Facebook user	18:00:13
21	could block a particular app that one of their	18:00:18
22	friends used?	18:00:23
23	Let's call the app "friend's app." So was	18:00:25
24	there at any time a setting where a user would have	18:00:30
25	the option of saying no to a friend's app getting	18:00:32

1	their information because their friend used that	18:00:37
2	app?	18:00:40
3	A. The feature that enables -- there was a	18:00:42
4	feature called "Blocks" which allows a user to	18:00:47
5	block a specific application.	18:00:50
6	My understanding is that that would mean	18:00:52
7	the application would not have access to their	18:00:55
8	information by the --	18:00:58
9	Q. So would the user get a notice, say, from	18:01:04
10	friend's app that said, "Your friend wants to share	18:01:07
11	your information. Do you -- are you providing --	18:01:11
12	like, will you authorize that?"	18:01:13
13	Is that how it functioned?	18:01:15
14	A. The way friend-sharing worked was that a	18:01:17
15	user could authorize an application, grant	18:01:20
16	permissions to that application to access -- well,	18:01:24
17	actually, let me back up.	18:01:28
18	The -- the permissions were introduced	18:01:30
19	into the API sometime after the Facebook Developer	18:01:33
20	Platform was first launched.	18:01:39
21	When -- in the original version, when a	18:01:44
22	friend -- when a user authorized an application,	18:01:46
23	that application had access to information about	18:01:48
24	that user and some information about that user's	18:01:52
25	friends.	18:01:55

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1	There were -- the user -- the user's	18:01:57
2	friends would not get notified that their friend	18:02:00
3	was using the application. There would be no	18:02:02
4	placebo active notifications.	18:02:05
5	Q. And what was that time period?	18:02:08
6	A. The way the permissions -- the granular	18:02:11
7	permissions were launched in April 2010, and so the	18:02:16
8	specific feature I'm referring to there is prior to	18:02:21
9	April 2010, apps would access a range of	18:02:27
10	information without granular permissions needed to	18:02:35
11	be granted.	18:02:38
12	Starting in April 2010, users granted	18:02:40
13	specific permissions to an application determining	18:02:43
14	which data that application had access to.	18:02:46
15	Q. Right.	18:02:52
16	A. Through both of those periods, when a user	18:02:52
17	installed an application, their friends would not	18:02:56
18	be notified that they had done so.	18:02:59
19	Q. Okay. And was there a point in time when,	18:03:03
20	before a user could share the user's friends	18:03:04
21	information, the users got notice that the app was	18:03:10
22	seeking friends information?	18:03:13
23	A. I'm not aware of any time where a	18:03:16
24	nonapp-user would be notified that one of their	18:03:20
25	friends was using an application.	18:03:23

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1	Q. Okay. And why was Facebook set up that	18:03:26
2	way so that friends didn't receive notification	18:03:29
3	when their users -- when their friends were trying	18:03:33
4	to provide access to their information?	18:03:36
5	A. The original premise of the Facebook	18:03:41
6	Platform was that when a user was using an	18:03:42
7	application, that application had access to, at the	18:03:48
8	limit, potentially, anything that that user would	18:03:52
9	be able to see on Facebook.	18:03:55
10	It was the user taking the information	18:03:57
11	that had been shared with them and making that	18:03:59
12	available to an application.	18:04:02
13	Q. And have you seen in documents that	18:04:07
14	structure referred to as "authorization by proxy"?	18:04:10
15	A. I don't recall seeing that phrase in	18:04:16
16	particular.	18:04:17
17	Q. So, now, could Facebook have set up the	18:04:24
18	platform so that before an app could get access to	18:04:26
19	a person's information, where that person was the	18:04:30
20	friend of someone using the app, that they could	18:04:33
21	have received notice that this app is attempting to	18:04:36
22	gain the nonapp user's information?	18:04:40
23	A. It's technically possible that when a user	18:04:50
24	authorized an application and granted friends	18:04:52
25	permissions, that a notification could have been	18:04:58

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1	sent. That's technically possible.	18:05:03
2	It would have introduced a number of	18:05:07
3	unusual experiences, however.	18:05:09
4	Q. And what do you mean by that?	18:05:15
5	A. So sometimes I'm logging into an	18:05:21
6	application or I'm using an application for the	18:05:24
7	very first time. I'm not necessarily, you know --	18:05:26
8	I'm using an application for the very first time.	18:05:30
9	It might be unexpected for Facebook to	18:05:33
10	broadcast -- to send a notification to some of my	18:05:39
11	friends that I was using the application.	18:05:46
12	Q. Now, unexpected or not, it would have	18:05:49
13	given those friends the ability to choose not to	18:05:51
14	share information in that context. Right?	18:05:54
15	A. So, again, in this case, the -- the way	18:05:58
16	that the Facebook Developer Platform was originally	18:06:01
17	set up was that an app -- based on the simple	18:06:03
18	founding premise that when -- if there was	18:06:10
19	information that a user could see on Facebook	18:06:13
20	because it had been shared with them on Facebook,	18:06:15
21	the -- that information would also be available to	18:06:18
22	applications that user was using.	18:06:23
23	Q. And were there discussions at Facebook of	18:06:30
24	the pros and cons of that approach to treating	18:06:33
25	information about users' friends?	18:06:37

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1	A. I've seen evidence of -- I've seen	18:06:42
2	evidence of discussions where the -- the impact of	18:06:45
3	that model was resulting in users being concerned	18:06:49
4	about the information that they could share with	18:06:55
5	applications and that their friends might be	18:07:01
6	sharing with applications, ultimately leading to	18:07:03
7	the changes made in 2014.	18:07:06
8	Q. And would it be fair to describe those	18:07:08
9	concerns as "privacy concerns"?	18:07:10
10	A. I think there are a range of concerns as	18:07:13
11	to how information was being shared with	18:07:15
12	third-party apps through the Developer Platform.	18:07:21
13	Q. And were privacy concerns included in that	18:07:25
14	range of concerns?	18:07:27
15	A. Privacy would have been -- information	18:07:31
16	expectation would have been one of the concerns	18:07:34
17	that was discussed.	18:07:36
18	Q. And by that, you mean people didn't	18:07:40
19	realize their information was being shared in that	18:07:42
20	way?	18:07:44
21	A. The -- there was discussion about the fact	18:07:47
22	that some people might not be aware that a friend	18:07:50
23	was using an application and that that friend's --	18:07:56
24	some of that user's friends' information had been	18:08:00
25	shared with the app.	18:08:05

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1	MR. LOESER: Okay. If we could go to	18:08:08
2	Tab 5.	18:08:10
3	I'm going to introduce what will be marked	18:08:15
4	as Exhibit 333.	18:08:17
5	(Deposition Exhibit 333 was marked for	18:08:29
6	identification.)	18:08:30
7	BY MR. LOESER:	18:08:31
8	Q. In a moment you'll see an email from	18:08:32
9	David Poll to Eddie O'Neil and also dated	18:08:35
10	December 9, 2013.	18:08:39
11	Do you see that on your screen?	18:08:42
12	A. I do.	18:08:44
13	Q. Do you know who David Poll is?	18:08:44
14	A. David Poll was an employee of Facebook,	18:08:50
15	now Meta, in the past, and I recall him being one	18:08:54
16	of the cofounders of a company called Parse.	18:08:58
17	Q. And from -- was there discussion at	18:09:07
18	Facebook about who owned friend information;	18:09:11
19	whether it was the user's information or the	18:09:14
20	friends' information?	18:09:19
21	A. Let me just read the exhibit before I	18:09:21
22	answer your question.	18:09:23
23	Q. Sure. And I -- it's a long string, and	18:09:25
24	I'm going to be asking you about some statements	18:09:29
25	made by Eddie O'Neil and David Poll on the second	18:09:32

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1	page of the email, if that helps, on the bottom.	18:09:37
2	A. (Reviewing document.)	18:09:54
3	Okay. It just scrolled.	18:09:55
4	Q. Let me apologize. Let me save some time	18:09:56
5	by just referring you to -- if you go to the second	18:09:59
6	page, this is a chat between Eddie O'Neil and	18:10:01
7	David Poll. Is that right?	18:10:04
8	A. This to me represents a chat between Eddie	18:10:07
9	and David, yes.	18:10:10
10	Q. Okay. And if you go to the bottom of the	18:10:11
11	second page, about two thirds of the way down,	18:10:13
12	Eddie O'Neil says:	18:10:17
13	███████████████████████ ████	
	██████████████ ██████████ ████	
	██████████████████████████ ████	
	████████████████ ████████ ████	
	██████████████████████████ ████	
	████ ████	
19	Do you see that?	18:10:32
20	A. I do see that.	18:10:33
21	Q. And does this -- does this suggest that at	18:10:35
22	Facebook, there was discussion about who owned --	18:10:39
23	and I can put in air quotes -- who owned friend	18:10:43
24	information; whether it belonged to the user or	18:10:46
25	belonged to the friends?	18:10:48

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1	A. My understanding, this is a discussion	18:10:54
2	about who -- who did or should have the ability to	18:10:55
3	choose how information was shared with third	18:11:04
4	parties.	18:11:09
5	It's -- I'm not sure I'd refer to it as	18:11:10
6	"who owns," but it's certainly a discussion about	18:11:13
7	the model or the models for which information could	18:11:19
8	or should be shared with third parties.	18:11:25
9	███ ███████████████████████	██████
	█ ████████████████████████	██████
	█ ███████████████	██████
	█ █████████████████████	██████
	█ ███ ████████████████	██████
	█ ███████████████████████████	██████
	█ ██████████████████████████	██████
	█ █████████████████████████	██████
	█ █████████	██████
	█ ███████████████████	██████
	█ █████████████████████████	██████
20	Q. But Facebook, obviously, knows what	18:12:08
21	regulatory and legal issues are -- were raised with	18:12:12
22	regard to friends permissions. Right?	18:12:22
23	MR. BLUME: Excuse me. I object.	18:12:26
24	Privilege. Potential privilege. If I may --	18:12:28
25	MR. LOESER: And let me -- sorry. Go	18:12:32

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1	ahead, Mr. Blume.	18:12:34
2	MR. BLUME: I just was asking permission	18:12:36
3	to instruct the witness unless you want to	18:12:38
4	rephrase.	18:12:40
5	MR. LOESER: Sure.	18:12:42
6	Q. Really, the point of my question was, you	18:12:42
7	don't know the answer to this question what the	18:12:44
8	regulatory or legal issues were, but Facebook knows	18:12:46
9	the answer to that. Right?	18:12:49
10	███ ████████████████████████	██████

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```
 1              But I -- I don't want to get into the --        18:14:01

 2     that's what I remember.  I don't want to get into        18:14:03

 3     the specifics.  I haven't read up on the -- exactly       18:14:06

 4     the specifics of this, but I've heard reference to        18:14:10

 5     Lulu and read references to Lulu in the documents         18:14:13

 6     I've read in preparation for this testimony.             18:14:17

 7         Q.   And that was -- that would be one of those      18:14:22

 8     concerns that you would consider related to how          18:14:24

 9     friend permissions were used by apps.  Right?            18:14:28

10     █   ████████████████████████████                         █████████

█   ██████████████████████████████████                            █████████

█   █████████████████████████                                     █████████

█   █  ████████████████████████████                               █████████

█   ███████████████████████████████████                           █████████

█   █████████████████████████████████                             █████████

█   ████                                                          █████████

█   █  ████████████████████████████                               █████████

█   ████████████████████████████████                              █████████

█   ████   █████████████████████████                              █████████

█   ███████████████████████████████████                           █████████

█   █████████████████████████████████                             █████████

22         Q.   And if you look at the next line in             18:15:20

23     Mr. O'Neil's chat, it says:                              18:15:23

24        █████████████████████████████████                     █████████

█      █████████████████████████████████                          █████████
```

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1 ███████████   ████████

2   And do you know what he is referring to   18:15:32

3   here?   18:15:34

4   A.   There's a couple of terms here.   18:15:38

5   Which one do you want me to focus on   18:15:40

6   first?   18:15:42

7   Q.   Well, is this a reference to the amount of   18:15:43

8   information that friends permissions was making   18:15:45

9   available to developers?   18:15:48

10   A.   Reading this, it seems relevant to the   18:15:55

11   friend permissions, but "huge amount of value" may   18:15:59

12   refer to a number of different ways that a   18:16:03

13   developer would perceive the -- the value of the   18:16:07

14   experience that they had got by integrating with   18:16:13

15   the Facebook Platform.   18:16:15

16   Q.   And what are -- what -- how can you   18:16:17

17   describe or what are the different ways that   18:16:21

18   developers obtained value from friends permission   18:16:23

19   information?   18:16:28

20   A.   So the friend permissions allowed   18:16:32

21   applications to build rich, engaging social   18:16:35

22   experiences even when, you know, one -- let me   18:16:38

23   start that again to make sure I frame this   18:16:45

24   correctly for you.   18:16:48

25   One of the benefits of the friend   18:16:49

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1	permissions for developers was that they could	18:16:51
2	build rich, engaging social experiences, including	18:16:54
3	those where not all of a user's friends were also	18:16:59
4	using the same application; also using the same	18:17:04
5	app.	18:17:09
6	That could manifest value in different	18:17:09
7	ways. It could enable applications to be more	18:17:12
8	retentive, so they were more frequently used a	18:17:19
9	whole number of different ways that the developers	18:17:23
10	might benefit from building social experiences.	18:17:26
11	Q. And what are the ways that providing	18:17:32
12	access to friends information was at "great expense	18:17:34
13	to Facebook as a business"?	18:17:39
14	A. So one of the ways that this might be	18:17:47
15	considered an expense is in trust and reputation.	18:17:50
16	Because of the way the APIs functioned originally.	18:17:57
17	And, as I've testified previously, there	18:18:03
18	were some concerns that we'd heard from users about	18:18:06
19	how the Platform worked, and that confusion could	18:18:10
20	have impacted the trust in Facebook as a product.	18:18:17
21	Q. And can you -- are there other types of	18:18:24
22	expense that Facebook recognized related to	18:18:28
23	providing access to friends permissions to	18:18:31
24	developers -- or partners, for that matter?	18:18:34
25	A. One way that you might classify that is	18:18:38

1	the computational energy it took to serve these	18:18:45
2	requests.	18:18:50
3	Actually serving an API call requires	18:18:52
4	compute, and so that's another way that providing	18:18:56
5	the platform in general and certain APIs would have	18:19:02
6	been an expense to Facebook.	18:19:08
7	Q. And what about the value of the -- of the	18:19:12
8	friend information itself?	18:19:14
9	Is that information valuable to Facebook	18:19:17
10	as a business, from a monetization standpoint?	18:19:19
11	A. Sorry. Can you help me understand the	18:19:25
12	context of your question?	18:19:27
13	That was a very general -- a general	18:19:29
14	question. I would like to get to the specifics.	18:19:31
15	Q. Sure. I'm just trying to understand from	18:19:33
16	Facebook's perspective what the great expense to	18:19:36
17	Facebook as a business was, and you've given me	18:19:39
18	some examples.	18:19:42
19	And I'm wondering if there's an economic	18:19:42
20	impact as well that would be covered by providing	18:19:45
21	thousands of apps with access to friend	18:19:47
22	permissions.	18:19:50
23	A. I'm not aware of any analysis that was	18:19:53
24	done that specifically determined -- or attempts to	18:19:56
25	determine the -- the financial value of friend	18:20:01

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1	permissions or the friend data as part of the	18:20:08
2	Developer Platform.	18:20:11
3	Q. Okay. Let's look at David Poll's text at	18:20:15
4	the bottom of the page. And he states:	18:20:18
5	████████████████████████████ ████	
	███████████████████████████████ ████	
	████████████████████████████████ ████	
	████████████████████████ ████	
	██████████████████ ████	
10	Do you see that?	18:20:32
11	A. I see that on the screen, yes.	18:20:33
12	Q. And as you testified earlier, that's the	18:20:35
13	type of setting that Facebook could have	18:20:37
14	technically implemented had it chosen to do so.	18:20:40
15	A. Let me just read the statement to make	18:20:44
16	sure I can answer accurately for you.	18:20:46
17	(Reviewing document.)	18:21:00
18	THE WITNESS: There's a lot of context	18:21:19
19	here to unpack. So I'm just trying to understand	18:21:21
20	what David Poll is speaking about.	18:21:24
21	So my understanding is that the "apps	18:21:38
22	others use" setting was partly delivered on the	18:21:41
23	expectation that -- that David is referring to	18:21:51
24	here.	18:21:54
25	So it would have been technically possible	18:21:59

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1	to allow a user to choose whether or not an	18:22:01
2	application had access to their data.	18:22:10
3	BY MR. LOESER:	18:22:14
4	Q. All right. We've talked a bit about	18:22:20
5	the -- I'm sorry, go ahead.	18:22:22
6	A. Sorry. Carry on.	18:22:25
7	Q. Okay. So moving on, the -- I've asked you	18:22:26
8	some questions about the different permissions, and	18:22:28
9	you've provided some helpful information about the	18:22:31
10	terminology used to discuss different permissions.	18:22:33
11	I do want to make sure I have a complete	18:22:37
12	understanding of all of the different permissions	18:22:40
13	that allowed access to friend information.	18:22:44
14	And I asked before if a number of the	18:22:48
15	permissions had the word "friends" in them, and you	18:22:52
16	said "Yes."	18:22:56
17	And it's also the case the number of	18:22:57
18	permissions that provided access to friend	18:22:59
19	information did not have the word "friend" in them.	18:23:02
20	Is that right?	18:23:05
21	A. There were permissions that allowed an app	18:23:08
22	to access information about a user and that user's	18:23:11
23	friends that didn't have "friend" in the title.	18:23:17
24	Q. Okay. And I'm going to run through some,	18:23:22
25	and then you can help me understand if there are	18:23:24

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1	others.	18:23:26
2	User-posts APIs are a type of -- emit	18:23:27
3	friend information. Right?	18:23:37
4	A. The user-posts API allowed an app to	18:23:38
5	access the posts of a user who had authorized the	18:23:42
6	application.	18:23:46
7	Q. And did it also provide access to the	18:23:48
8	user's friends' posts?	18:23:52
9	A. My understanding is the user-posts	18:23:56
10	permission is no. It would not have allowed an app	18:24:01
11	to access a user's friends' posts.	18:24:04
12	Q. And even where the friend responds to the	18:24:08
13	post or comments or indicates a like to a post?	18:24:10
14	A. My understanding of the way the user posts	18:24:16
15	permission worked was that it would have emitted	18:24:19
16	the posts of the user who had authorized the	18:24:23
17	application. It may have also included likes and	18:24:26
18	comments on that post.	18:24:29
19	Q. Okay. And likes and comments from a	18:24:32
20	friend would be friend information. Right?	18:24:34
21	A. Some posts, if they had only been shared	18:24:43
22	with a friend and they had been liked or commented	18:24:47
23	on by a friend, then the -- the app would be able	18:24:50
24	to see the user ID and the comment and some other	18:24:57
25	information about the comment that you could	18:25:02

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1   construe as having been made by a friend.   18:25:05

2   Q.   Okay. And the Event API, is that a   18:25:08

3   similar answer to that; that the Event API gives   18:25:13

4   access to events that the user attended, but any   18:25:18

5   comment or posts or other information from the   18:25:21

6   friend regarding that event, that also would be   18:25:24

7   accessible for the user's friends. Right?   18:25:28

8   A.   So, again, the specifics really matter   18:25:35

9   here.   18:25:37

10   The user events permission allowed an app   18:25:38

11   to access the events that a user, as I understand   18:25:41

12   it, had marked themselves as attending or not   18:25:45

13   attending or had responded to in some way.   18:25:48

14   Through that -- through the Events API,   18:25:56

15   the app could also access other information about   18:25:58

16   that event which may have included other attendees,   18:26:01

17   some of whom might be the user's friends, some of   18:26:05

18   whom might not be, depending on the privacy setting   18:26:09

19   of the event and who was attending.   18:26:14

20   Q.   Okay. And so the Events API also could   18:26:15

21   obtain some friends information for those reasons.   18:26:19

22   A.   The events API may have allowed an app to   18:26:23

23   access information about a user's friends who were   18:26:29

24   attending an event that the user was attending, for   18:26:33

25   example.   18:26:39

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1	Q. What is the "Pages API"?	18:26:42
2	A. The Pages API refers to a collection of	18:26:45
3	APIs that would allow an application to access	18:26:48
4	content on or information about a Facebook page.	18:26:52
5	Q. And could that API also allow access to	18:26:58
6	friends information of the user who used the app	18:27:03
7	with access to that API?	18:27:07
8	A. So the Pages API allowed an application to	18:27:12
9	access information about the page. At times, it	18:27:21
10	also allowed the application to access posts on	18:27:24
11	that page's timeline, and those posts could also	18:27:26
12	have included comments on those posts. And those	18:27:31
13	comments were publicly available on Facebook and	18:27:38
14	may have been also available by the API.	18:27:41
15	Q. And so that would include friends	18:27:44
16	information as well. Right?	18:27:46
17	A. The Pages API could be called by an	18:27:49
18	application without a specific logged-in user, and	18:27:52
19	so the information available may have included	18:28:00
20	friend information.	18:28:03
21	Q. And what is the "Groups API"?	18:28:06
22	A. The Groups API refers to a collection of	18:28:12
23	APIs which allow an app to access the groups that a	18:28:15
24	user is a member of.	18:28:21
25	Q. And could the Groups APIs also provide	18:28:26

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1	access to information about friends of the app	18:28:31
2	user?	18:28:34
3	A. The Groups API would have allowed the app	18:28:37
4	to access the member list of a -- that at the time	18:28:42
5	included the member list of the groups that the	18:28:49
6	user was a member of and posts in the group that	18:28:51
7	the user was a member of.	18:28:53
8	The member list could include people who	18:28:57
9	were the app user's friends.	18:28:59
10	Q. And it could also include people who were	18:29:02
11	not the app user's friends. Right?	18:29:04
12	A. A group on Facebook can be open or closed	18:29:08
13	and secret and may contain people who are not the	18:29:14
14	user's friends, and the group's API would have	18:29:16
15	allowed the app to see the members of the group.	18:29:21
16	Q. Are you familiar with the Taggable Friends	18:29:25
17	API?	18:29:27
18	A. I am familiar with the Taggable Friends	18:29:31
19	API.	18:29:33
20	Q. And what information does that API provide	18:29:34
21	access to?	18:29:37
22	A. My understanding is that the Taggable	18:29:39
23	Friends API retrieved -- allowed an app to retrieve	18:29:43
24	a very limited set of information about the app	18:29:48
25	user's friends specifically to enable them to	18:29:51

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1	render a tagging type-ahead.	18:29:55
2	Q. And what is a "tagging type-ahead"?	18:30:01
3	A. I think the best way to illustrate this is	18:30:04
4	through an example.	18:30:06
5	Imagine that you are a runner and you use	18:30:07
6	Strava, and you go on a run with me, but I am not a	18:30:13
7	Strava user. I track my runs using another app.	18:30:20
8	After the run, you might choose to share	18:30:25
9	your run back to Facebook, and you want to tag me,	18:30:29
10	one of your Facebook friends, in that story because	18:30:33
11	we went on the run together.	18:30:36
12	If I don't use Strava, then there was the	18:30:39
13	desire to give the app away to render a way for you	18:30:46
14	to tag me in that story when it was published back	18:30:53
15	to Facebook.	18:30:56
16	Q. Okay. So in that context, it provides	18:30:59
17	friend information about the person who doesn't use	18:31:03
18	Strava.	18:31:06
19	A. It provides a very, very limited set of	18:31:07
20	information about the person -- the user's friend	18:31:10
21	who doesn't use Strava.	18:31:13
22	Q. And we talked a bit about the Social	18:31:25
23	Context API. And you described that as an API that	18:31:27
24	provided information about a user and one other	18:31:32
25	person.	18:31:34

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1	Do I recall that correctly?	18:31:36
2	A. That's not the intent of my testimony.	18:31:37
3	It provided the social -- it provided	18:31:43
4	social context between two app users.	18:31:46
5	So when you called the Social Context API,	18:31:50
6	it was called on behalf of a user, and you would	18:31:53
7	also specify one of that user's friends who was	18:31:56
8	also -- or another user ID of somebody who was	18:32:01
9	using the application, and the API would return	18:32:04
10	social context between those two people.	18:32:07
11	Q. And so could that API provide information	18:32:15
12	about people who are not using the app with access	18:32:18
13	to Social Context API?	18:32:22
14	A. My understanding is the information	18:32:24
15	returned by that API would be different whether or	18:32:26
16	not two users -- one of the users was using the	18:32:28
17	application and one of the users displayed in the	18:32:32
18	Social Context wasn't.	18:32:36
19	Q. And so walk me through what happens when	18:32:39
20	the -- the other person is not using the app.	18:32:44
21	What information about that person is	18:32:49
22	provided through the app?	18:32:51
23	A. I'd need to refer to the API documentation	18:32:53
24	at the time to give -- to give you specifics, but	18:32:56
25	my understanding is it would return a very limited	18:32:59

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1	set of information about people that the two users	18:33:04
2	had in common that were not using the application.	18:33:09
3	Q. Okay. So let's -- let's -- let me provide	18:33:12
4	an example. Maybe this would be helpful.	18:33:15
5	So if a Facebook user watches a movie,	18:33:17
6	let's say The Godfather, and the app that user	18:33:21
7	is -- authorizes an app that has a Social Context	18:33:29
8	API permission, what other information about people	18:33:34
9	watching The Godfather, and from whom, would that	18:33:39
10	API provide access?	18:33:43
11	A. I can't -- I don't recall the specific	18:33:47
12	behavior of the API, and I think to do that, I'd	18:33:49
13	need to refer to the developer documentation that	18:33:52
14	was available at the time as to how -- how that	18:33:54
15	specific API behaved. I don't want to speculate if	18:33:57
16	I don't have the -- the facts.	18:34:01
17	Q. Well, let's try and create enough facts so	18:34:04
18	you can provide some helpful information.	18:34:06
19	Let's say a user did watch the movie	18:34:08
20	Godfather and posts on their Facebook page, "I love	18:34:11
21	the movie Godfather. I just watched it."	18:34:15
22	Explain to me how the Social Context API	18:34:20
23	would use that information and with whom it would	18:34:23
24	use it if there's an app that has Social Context	18:34:26
25	API.	18:34:29

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1	A. So I need to refer to the specifics about	18:34:30
2	the -- how the social context API works. You're	18:34:33
3	asking a very -- a question that requires, you	18:34:36
4	know, a detailed answer, and I don't have in my	18:34:40
5	mind the exact behavior of how the Social Context	18:34:42
6	API worked and the context in which it worked and	18:34:47
7	the specifics of the information that would have	18:34:51
8	been returned by the API.	18:34:53
9	Q. Okay. Well, then, if you can, describe	18:34:56
10	more generally -- and I'm trying to understand from	18:34:58
11	where the Social Context API draws information.	18:35:02
12	So I know from what you said that it draws	18:35:05
13	information from the user who authorized the app.	18:35:07
14	And what other information does it draw	18:35:10
15	that pertains to that user? Like -- or from who?	18:35:13
16	Who else would be sort of folded into the -- or who	18:35:17
17	else would be in the net that that API casts?	18:35:20
18	A. The precise answer depends on the	18:35:25
19	specifics of the Social Context API. It's one of	18:35:29
20	the APIs that I don't have the details of exactly	18:35:31
21	how it worked -- in my head today -- so it's hard	18:35:34
22	to give you a specific answer to that accurately.	18:35:38
23	Q. Okay. But there's -- as you mentioned,	18:35:43
24	there's a source -- there's a place you can go at	18:35:45
25	Facebook where you can see and learn exactly what	18:35:48

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1	information that API provides access to?	18:35:51
2	A. My understanding is that the code base of	18:35:55
3	Facebook may help understand which API specifically	18:35:59
4	you're referring to and its behavior over time.	18:36:04
5	Q. And based upon what you know now, can you	18:36:09
6	say whether that API provides access to friends	18:36:12
7	information?	18:36:16
8	A. I -- again, to answer that question	18:36:19
9	specifically, I'd need to go and look at the exact	18:36:22
10	behavior of the Social Context API. There are	18:36:25
11	other APIs whose behavior I can describe. The	18:36:28
12	Social Context API, I -- I don't have the	18:36:31
13	information as to, like, exactly which API you're	18:36:34
14	referring to, exactly how it behaved, and exactly	18:36:37
15	who it was available to and when.	18:36:43
16	So I just don't want to give you incorrect	18:36:46
17	information.	18:36:49
18	Q. Well, that's fair, and I appreciate that	18:36:50
19	answer.	18:36:51
20	Do you know of or can you provide any	18:36:52
21	other APIs that provided access to friend	18:36:54
22	information?	18:36:59
23	And let me make your answer easier. Other	18:37:00
24	than those that have the word "friends" in the --	18:37:03
25	A. When you're referring to friends	18:37:07

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1	information here, can you be more specific	18:37:09
2	precisely what information -- what would classify	18:37:12
3	as friends information in your question?	18:37:15
4	Q. Yeah, and I'm trying to use the definition	18:37:17
5	we came up with before. But it's really any	18:37:19
6	information about the friends -- any Facebook data	18:37:22
7	or information about the friends of the person who	18:37:24
8	authorized the app.	18:37:26
9	A. Okay. Cool.	18:37:32
10	Some other APIs that -- that would have	18:37:36
11	been -- that fit that description, there is an API	18:37:38
12	called a "Taggable Friends API" that you've	18:37:46
13	previously mentioned. There was another one called	18:37:51
14	the "Invitable Friends API."	18:37:54
15	And then the -- several of the user	18:38:01
16	permissions, user_posts, user_photos, user_videos,	18:38:08
17	as per my previous testimony, would have allowed	18:38:20
18	the app to access the user's photos, but comments	18:38:23
19	and likes on those photos by my friends may also	18:38:28
20	have been returned by that API.	18:38:33
21	Q. And you said "photos," but that would be	18:38:36
22	the same for videos as well?	18:38:38
23	A. The user photos and user videos APIs	18:38:41
24	behaved the same way, to my knowledge -- or in a	18:38:47
25	similar way, to my knowledge.	18:38:50

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1	Q. And do you know, with regard to those user	18:38:52
2	permissions, what time period they were active on	18:38:56
3	the Platform?	18:38:58
4	A. The permissions, as I understand it, were	18:39:00
5	added in April 2010, in terms of the permissions	18:39:03
6	themselves.	18:39:08
7	The behavior of the APIs that were gated	18:39:11
8	by those permissions changed over time. So it's	18:39:16
9	hard to say exactly when the behavior changed, but	18:39:20
10	the permissions that those -- those specific	18:39:23
11	permissions were made available, as I understand	18:39:27
12	it, in April 2010.	18:39:29
13	MR. BLUME: I'm sorry to -- when you're at	18:39:32
14	a breaking point, if we could break.	18:39:34
15	MR. LOESER: Yeah. One more question.	18:39:36
16	Q. Those permissions, the user permissions	18:39:38
17	you just described, are they still available on the	18:39:41
18	Platform today?	18:39:44
19	A. My understanding is that some of those	18:39:47
20	permissions are still available today, but I would	18:39:49
21	want to review the public API documentation to be	18:39:54
22	sure.	18:39:58
23	MR. LOESER: And I apologize, Mr. Blume, I	18:39:59
24	just have two more questions that relate to this.	18:40:01
25	If that's okay, I'll ask --	18:40:04

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1	MR. BLUME: Okay.	18:40:06
2	BY MR. LOESER:	18:40:06
3	Q. Now, we've gone through a number of	18:40:07
4	different APIs, and I have attempted to elicit	18:40:08
5	information about all the APIs that provide access	18:40:11
6	to friend information as we've defined that.	18:40:13
7	Is there a tool or is there a list or a	18:40:16
8	database or something at Facebook that identifies	18:40:19
9	every single API that provides friend information	18:40:22
10	in any way?	18:40:28
11	A. I'm not aware of a tool that identifies	18:40:33
12	the subset of the Facebook Developer Platform APIs	18:40:38
13	that would have returned information about a user's	18:40:42
14	friends.	18:40:47
15	Q. And do you know if, at any point, Facebook	18:40:49
16	has undertaken the effort to identify every single	18:40:51
17	API that emitted friend information?	18:40:55
18	████ ████████████████████████████	████
	████████████████████████████████	████
	██████████████████████████████	████
	████████████████████████	████
22	Q. And do you know if that effort looked at	18:41:22
23	all of the different APIs that I just ran through	18:41:25
24	with you: Taggable Friends, Invisible Friends,	18:41:29
25	User Permissions, Groups, Events, Posts, and the	18:41:33

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1	like?	18:41:36
2	A. My understanding is that effort would have	18:41:38
3	looked through all of the APIs that were commonly	18:41:40
4	available on the Facebook developer endpoint	18:41:42
5	platform at the time.	18:41:45
6	Q. My last question, then we can take a	18:41:47
7	break:	18:41:49
8	Facebook can determine definitively with	18:41:50
9	respect to every API whether that API emitted any	18:41:53
10	friend information. Right?	18:41:57
11	A. My understanding is that for a given API	18:42:02
12	method, it is determinable what information would	18:42:06
13	have been emitted by that API.	18:42:10
14	MR. LOESER: Okay. We can take a break	18:42:14
15	now. Thank you for continuing on until we finished	18:42:16
16	that topic.	18:42:19
17	THE VIDEO OPERATOR: Okay. Then we're off	18:42:21
18	the record at 6:42 P.M.	18:42:23
19	(Recess from 6:42 P.M. to 7:00 P.M.)	18:42:25
20	THE VIDEO OPERATOR: We're back on the	19:00:38
21	record at 7:00 P.M.	19:00:39
22	MR. LOESER: Mr. Cross, we're going to put	19:00:44
23	up another exhibit for you. It's previously been	19:00:45
24	marked Exhibit 98.	19:00:48
25	And while it's being loaded, this appears	19:00:55

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1	to be a post from you on the internal group app	19:00:58
2	review and policy enforcement feedback and	19:01:03
3	questions on June 11, 2015. Is that right?	19:01:05
4	A. I'm not seeing anything on the screen just	19:01:14
5	yet. Or in the Veritext Egnyte thing.	19:01:16
6	(Previously marked Exhibit 98 was	19:01:21
7	presented to the witness.)	19:01:26
8	MR. BLUME: Do you have an exhibit number?	19:01:28
9	MR. LOESER: Yeah, it's Exhibit Number 98.	19:01:30
10	THE WITNESS: I'm just going to quickly	19:01:39
11	turn on the lights in my room. It's getting dark	19:01:41
12	here.	19:01:45
13	Okay. I'm seeing something now. Thank	19:01:50
14	you.	19:01:52
15	BY MR. LOESER:	19:01:54
16	Q. And do you see the exhibit stamp 98?	19:01:54
17	A. I do.	19:01:58
18	Q. Okay. And then if you look at the top of	19:01:59
19	the next page, it says "App Review and Policy	19:02:01
20	Enforcement Feedback and Questions."	19:02:04
21	A. I see that, yes.	19:02:09
22	Q. And what -- is this a -- like, what is	19:02:11
23	this?	19:02:13
24	Where was this posted?	19:02:15
25	A. I can't confirm where this was posted from	19:02:20

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1	what I'm seeing here. It's -- yeah. I -- from	19:02:23
2	what I'm seeing on the screen, I can't 100 percent	19:02:27
3	confirm where this -- where this was posted.	19:02:30
4	Q. Okay. And in June of 2015, what was your	19:02:34
5	position at Facebook?	19:02:36
6	A. I was a product manager on the Facebook	19:02:39
7	Developer Platform.	19:02:42
8	Q. Okay. And was there a list serve or	19:02:45
9	something that was -- where people provided	19:02:48
10	feedback and questions for app review and policy	19:02:52
11	enforcement?	19:02:55
12	A. There was likely a Facebook group. We	19:02:57
13	used Facebook internally to discuss that. That's	19:02:59
14	what this may be. I just can't 100 percent confirm	19:03:03
15	it from what I'm looking at here.	19:03:06
16	Q. Okay. And if you look at just your post	19:03:09
17	starting at the top, it refers to something called	19:03:13
18	██████████████	████████
19	But before I ask you questions about that,	19:03:20
20	there's a link below that.	19:03:23
21	Can you tell what that link is?	19:03:25
22	A. That looks to me like a -- what, a URL to	19:03:31
23	an image of -- first of all, that's what it looks	19:03:39
24	like to me. I can't confirm if that URL is the URL	19:03:42
25	for the image directly below it. It's possible,	19:03:47

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```
 1      but I can't confirm that.                        19:03:52

 2           Q.  Okay.  Well, let's look at your -- your   19:03:54

 3      post.  It says:                                  19:03:57

 4

 7           Do you see that?                            19:04:09

 8      A.  I see that on the screen, yeah.              19:04:09

 9           Q.  And below that, you write:              19:04:11

10

17      the user who's authorized the application who have  19:04:36

18      not yet authorized the application themselves.   19:04:41

19
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9   Did I read that correctly?   19:05:41

10   A.   You read that correctly.   19:05:43

11   Q.   And "V2," is that a reference to Graph API   19:05:45

12 Version 2?   19:05:47

13   A.   That would be a reference to Graph API   19:05:48

14 Version 2.   19:05:50

15   ▮   ▮▮▮▮▮▮▮▮▮▮   ▮▮

   ▮ ▮▮▮▮▮▮▮▮▮▮▮   ▮▮

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19   A.   So the intended use, as I understand it,   19:06:06

20 and user_posts and user_photos was to grant apps   19:06:08

21 the ability -- well, for users to be able to   19:06:12

22 authorize an application to access their user posts   19:06:15

23 and photos for some value that the application was   19:06:19

24 providing to users.   19:06:24

25   Q.   Okay. And you thought that because user   19:06:29

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1	posts and user photos were emitting friend data and	19:06:31
2	Facebook had announced it had deprecated friend	19:06:34
3	data. Right?	19:06:38
4	A. So Facebook had announced it had -- it was	19:06:41
5	deprecating the friend permissions. That's what	19:06:44
6	Facebook announced as part of the API V1 changes.	19:06:49
7	So that's important to clarify.	19:06:55
8	Q. Okay. And -- but when you say that it	19:06:59
9	██████████████████████████████████████ ████████	
	██████████████████████████████████████ ████████	
	████████████████████████████████ ████████	
	███████████████████████████████ ████████	
13	A. Several of the changes in API V2, or the	19:07:20
14	suite of things that were launched along with API	19:07:26
15	V2, were about limiting the ability of applications	19:07:29
16	to access a user's friends' content and	19:07:36
17	information.	19:07:45
18	In this case, what's still available to	19:07:46
19	this application is the likes and comments made by	19:07:50
20	a user's friends on a user's timeline posts.	19:07:54
21	Q. Okay. And how does that violate the	19:08:08
22	spirit of the V2 changes?	19:08:10
23	A. The spirit of the V2 changes, as I	19:08:16
24	recall -- trying to remember what I wrote in this	19:08:19
25	post nearly seven or eight years ago -- is the apps	19:08:23

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1	would have less access to information about a	19:08:30
2	user's friends who were not using the application.	19:08:39
3	That was indeed behind any of the changes	19:08:45
4	in API V2; but in this case, the application was	19:08:51
5	still accessing some information about the user's	19:08:58
6	friends who had commented or liked on the original	19:09:02
7	post -- on the app-using user's posts.	19:09:05
8	Q. And so you expressed those concerns.	19:09:22
9	And do you recall whether this app	19:09:27
10	continued to have access to the user posts and user	19:09:30
11	photos after you expressed these concerns?	19:09:35
12	A. From reading the thread that continues	19:09:40
13	below -- below this, it looks like the conclusion	19:09:45
14	was reached that this activity was not against	19:09:48
15	policy as defined at the time, and this access --	19:09:54
16	this use case should continue.	19:10:00
17	I don't recall -- I do not know what	19:10:05
18	██	████████
19	Q. Now, Mr. Cross, there were thousands of	19:10:24
20	apps that had access to friend information. Is	19:10:26
21	that right?	19:10:28
22	A. Over what time period are you referring	19:10:35
23	to?	19:10:37
24	Q. Oh, that's a good question.	19:10:38
25	So prior to the introduction of Graph API	19:10:40

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1	Version 2, there were thousands of apps that had	19:10:43
2	access to friend permissions. Right?	19:10:46
3	A. Prior to the introduction of API	19:10:49
4	Version 2, any application on the Facebook	19:10:51
5	Developer Platform could request the friend	19:10:53
6	permissions from users.	19:10:56
7	Q. And Facebook evaluated the number of apps	19:10:59
8	that had access to friend permissions as part of	19:11:04
9	its preparation for the introduction of Graph API	19:11:08
10	Version 2. Right?	19:11:12
11	A. In preparation for the changes launched on	19:11:15
12	April 30, 2015, a number of initiatives were	19:11:18
13	undertook to understand the potential impact of	19:11:24
14	these changes on the developer ecosystem.	19:11:26
15	Q. And included in those initiatives was	19:11:31
16	identifying the number of users who downloaded apps	19:11:34
17	with access to friend information. Right?	19:11:37
18	A. Can you help me understand what you mean	19:11:40
19	by "downloaded"?	19:11:41
20	Q. I'm sorry. Installed the apps.	19:11:43
21	A. My understanding is that one of the things	19:11:50
22	that was looked at is the number of users who had	19:11:52
23	granted one or more friend permissions to one or	19:11:56
24	more applications.	19:11:59
25	Q. And as part of those initiatives as well,	19:12:01

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1	Facebook identified the number of API calls on the	19:12:05
2	friend-sharing APIs. Right?	19:12:09
3	A. I would need to see, like, specific	19:12:16
4	documentation there.	19:12:19
5	Like, recall there was no such thing as	19:12:21
6	the friend APIs. There are friend permissions, and	19:12:25
7	there are APIs, and those APIs can be called by the	19:12:29
8	app-using user or on behalf of that app-using	19:12:32
9	user's friends.	19:12:38
10	So, again, I want to make sure I'm giving	19:12:39
11	you the right answer, given the specifics.	19:12:41
12	Q. I appreciate that. So let's speak in	19:12:43
13	terms of friend permissions, then.	19:12:45
14	One of the things that Facebook can	19:12:47
15	identify is the number of API calls on any of the	19:12:49
16	permissions that are available on the Platform.	19:12:53
17	Right?	19:12:56
18	A. So, again, the --	19:13:00
19	Q. Or did I mix up the terminology -- the	19:13:01
20	calls are referred to the APIs themselves, not the	19:13:03
21	permissions. Is that right?	19:13:06
22	A. When you -- when you see a reference to	19:13:07
23	"API calls," that's referring to APIs.	19:13:09
24	The permissions determine what information	19:13:12
25	is available via those APIs.	19:13:15

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1	So, yeah, those concepts are separate,	19:13:18
2	yeah.	19:13:21
3	Q. So Facebook can identify and did identify	19:13:21
4	the number of API calls on the APIs that provided	19:13:24
5	access to friend information.	19:13:30
6	A. The -- the documents I've read show that	19:13:41
7	there was an effort done to determine how API calls	19:13:45
8	that were made by applications -- and some of the	19:13:50
9	API calls -- some of the APIs would -- would	19:13:54
10	specifically map to friend data; other API calls	19:13:59
11	would not be specific to friend data.	19:14:03
12	Q. And I appreciate that. And I'm trying to	19:14:08
13	make sure I understand what Facebook knew about the	19:14:10
14	use of APIs that provided access to friend	19:14:13
15	information.	19:14:18
16	And my understanding is that Facebook	19:14:18
17	identified that thousands of apps installed by	19:14:20
18	millions of users made millions of calls on	19:14:24
19	friend-sharing APIs. Is that a fair statement?	19:14:27
20	A. No. The -- the friend-sharing API part of	19:14:31
21	that doesn't map with my understanding of how the	19:14:36
22	platform worked.	19:14:39
23	If you could show me a document that	19:14:40
24	states that, that might be helpful for me to	19:14:42
25	analyze.	19:14:45

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1	Q. Yeah. And we'll get into a document	19:14:47
2	that -- 'cause as you say, there were various	19:14:49
3	initiatives that studied the extent to which friend	19:14:52
4	information was made available by apps via APIs	19:14:56
5	that provided access to that information. Okay.	19:15:01
6	Right?	19:15:05
7	A. There were a number of studies done to	19:15:05
8	analyze the use of the Platform by developers and	19:15:08
9	how they were using the Platform and which	19:15:12
10	permissions they were requesting and which APIs	19:15:15
11	they were -- they were calling.	19:15:17
12	Q. And deprecating -- and I hope I'm using	19:15:20
13	the terminology right -- but deprecating friend	19:15:24
14	permissions, that was a thing. Right?	19:15:27
15	A. In API Version 2, the friend permissions	19:15:31
16	were not readily grantable by a user using an	19:15:35
17	application that was using API Version 2.	19:15:40
18	Q. And that was a big change at Facebook	19:15:44
19	because thousands of apps had access to the APIs	19:15:46
20	that allowed friend-sharing. Right?	19:15:52
21	A. The way that the Facebook Developer	19:16:01
22	Platform worked before API Version 2 allowed any	19:16:03
23	application to request friend permissions, and a	19:16:08
24	number of applications did so.	19:16:14
25	And so the removal of those permissions	19:16:17

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```
 1    from the public API surface area in API Version 2,      19:16:21

 2    yes, was considered a significant change to the         19:16:27

 3    Facebook Developer Platform.                            19:16:30

 4            MR. LOESER:  If we could go to Tab 8.            19:16:35

 5            (Deposition Exhibit 334 was marked for          19:17:10

 6            identification.)                                19:17:12

 7            MR. LOESER:  This is Exhibit 334.  The           19:17:15

 8    Bates number on this is 01685319.ppt.                   19:17:20

 9        Q.  Is that right?                                  19:17:26

10            And, Mr. Cross, do you see what's on your       19:17:28

11    screen?                                                 19:17:30

12        A.  I do.                                           19:17:30

13        Q.  And this is -- you can take a minute to         19:17:32

14    skim through it.  I just have a few questions about     19:17:36

15    this slide deck.  And the first page says: "Login       19:17:39

16    V4 (+PS12n) - 1/24/2014 update."                        19:17:42

17            Can you describe what this refers to just       19:17:49

18    by looking at the title of it?                          19:17:55

19        A.  "Login V4" refers to the update to the          19:17:57

20    Facebook Platform Login dialogue that were launched     19:18:00

21    in -- as part of the changes announced on               19:18:06

22    April 30, 2014.  So that's what "Login V4" refers       19:18:10

23    to.                                                     19:18:16

24            And "PS12n" refers to a term called             19:18:16

25    "platform simplification," which was one of the         19:18:20
```

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1	terms used as part of the work that led up to the	19:18:23
2	changes that were announced in -- on April 30,	19:18:30
3	2014.	19:18:34
4	Q. Okay. And if you -- if you turn to the	19:18:37
5	next page of that slide deck, there's an "Overview"	19:18:41
6	slide which describes the content of this	19:18:47
7	presentation.	19:18:51
8	███████████████████ █████ ███ ██████	
▋	████████████████████████ ██████	
▋	██████ ██████████████████ ██████	
▋	██████ ████████████████ ██████	
▋	████████ ██████	
13	Did I read that correctly?	19:19:05
14	A. You read that correctly.	19:19:06
15	Q. And we've discussed user trust.	19:19:07
16	What does "developer trust" refer to?	19:19:10
17	A. "Developer trust" refers to how Facebook	19:19:14
18	thought about its relationship with its platform	19:19:17
19	developers; whether or not those developers would	19:19:21
20	be keen to continue developing integrations with	19:19:27
21	the Facebook Developer Platform.	19:19:31
22	Q. And why did Facebook want developers to do	19:19:33
23	that?	19:19:36
24	A. If you're building a developer platform,	19:19:40
25	you typically want developers to build for your	19:19:43

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1	developer platform.	19:19:46
2	Q. And what does Facebook gain from that?	19:19:48
3	A. Facebook gained a number of things from	19:19:55
4	its Developer Platform, various different types,	19:19:56
5	depending on the functionality of the app provided.	19:20:03
6	Q. Okay. Are there a couple of main	19:20:08
7	priorities?	19:20:11
8	A. One example would be allowing apps that	19:20:15
9	would -- users using applications where users would	19:20:22
10	share content or activity in their applications	19:20:26
11	back to Facebook so that it could be seen on	19:20:31
12	Facebook by that user's friends on that Newsfeed.	19:20:33
13	Q. And did Facebook, then, have an appetite	19:20:38
14	for more information because it utilized that	19:20:42
15	information in its Advertising Platform?	19:20:44
16	A. I haven't prepared to talk about how the	19:20:51
17	advertising systems work. That's -- that's not my	19:20:54
18	area of expertise in general, and it's not	19:20:57
19	something I prepared in this -- to testify on. I	19:21:01
20	understand there are other people doing that.	19:21:04
21	My understanding of the reason why we were	19:21:09
22	keen for apps to share contact back to Facebook is	19:21:13
23	that that would result in content on Facebook that	19:21:18
24	could be viewed in Newsfeed that people could like	19:21:21
25	and comment and reshare.	19:21:24

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```
 1        Q.  And -- and you're not knowledgeable about        19:21:26

 2   whether it was also -- that information was used          19:21:29

 3   to -- for the benefit of the targeted advertising        19:21:32

 4   systems?                                                  19:21:36

 5        A.  I am not an expert in how Facebook's             19:21:38

 6   targeted advertising systems work or what                19:21:41

 7   information is used to inform how ad-targeting            19:21:43

 8   works.                                                    19:21:48

 9   ████  ████████████████████████████████    ██████

     ██  ████████████                                ██████

     ██        ██████████████████████████            ██████

     ██  ████  ████████████████████████████████      ██████

     ██  ████████████████████████████████            ██████

     ██  ████████████████████████████████            ██████

     ██  ████████████████████████████████            ██████

16        Q.  Okay.  If you could turn to page 6 of this      19:22:24

17   slide deck -- and it doesn't have page numbers on        19:22:28

18   it, so we'll flip to the sixth page and tell you,        19:22:31

19   "This is the sixth page."                                19:22:34

20        Do you see the slide on the screen now?             19:22:36

21        A.  I do.                                            19:22:40

22        Q.  And do you see the title of that slide?         19:22:41

23        A.  I do.                                            19:22:44

24        Q.  And what does it say?                           19:22:46

25   ████  ████████  ████████████████████████        ██████
```

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```
1    ███      ████████████████████                    ███████

2         A.   I -- I don't know what high-value perms      19:22:57

3    are in a general context.  The slide includes a       19:23:04

4    number of permissions that were available on the      19:23:07

5    Facebook Developer Platform, and this slide is by      19:23:10

6    inference calling those "high-value perms."           19:23:15

7         But I can't say today exactly what               19:23:18

8    "high-value perms" means in general.                  19:23:20

9         Q.   And what is Facebook's definition of        19:23:24

10   "high-value perms"?                                   19:23:27

11        And I assume that's the permissions.  So         19:23:30

12   high-value permissions?                               19:23:32

13        A.   I'm not aware of Facebook having a          19:23:34

14   definition of "high-value perms" that's general and   19:23:35

15   commonly used.  This seems to be a set of             19:23:38

16   terminology created by the author of this deck.       19:23:43

17   ████  █████  ████████████████████        ██████

█    ████████████████████████████████       ██████

█    ██████████████████  ████████            ██████

█    ██████████████████████████              ██████

█    ██████████████████████████              ██████

█    █████████████                           ██████

█        ████████████                        ██████

█    ███  ██████████████████████             ██████

█    ████████████████████████                ██████
```

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1 ██████████   ████████

██ ██   ████████████████████████   ████████

██ ████████████████████████   ████████

██ ████████████████████████   ████████

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██ ██████████████████████   ████████

██ █████████████████   ███████   ████████

12   A.   Well, I can see on the slide the number of   19:24:58

13 permissions that the author of this deck has   19:25:01

14 somehow categorized as "high-value perms."   19:25:04

15   But, like I said, this isn't -- this   19:25:07

16 doesn't resonate to me as a -- as a general   19:25:09

17 classification that was widely used.   19:25:13

18   ██ ████████████████████████   ████████

██ █████████████████   ███████████████   ████████

██ ██████████████████   ███████████   ████████

21 right?   19:25:26

22   A.   That's what I see in the column header,   19:25:28

23 yeah.   19:25:30

24   Q.   And so earlier, I was asking you questions   19:25:32

25 to try and get a scope -- understand the scope of   19:25:34

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1   friend-sharing use in particular.   19:25:38

2   ██████████████████████████████   ████████

█   ████████████████████████████████   ████████

█   ████████████████████████████████   ████████

█   ██████ ██████   ████████

█   ████ ██████████████████████████   ████████

█   ████████████████████████████   ████████

█   ████████████████████████████   ████████

█   ████████████████████   ████████

10   It's not clear from what I'm seeing here   19:26:16

11   whether or not that was an average or what   19:26:19

12   particular day or from what time period that data   19:26:21

13   was collected, to be clear.   19:26:23

14   Q. And earlier you talked about various   19:26:27

15   initiatives that Facebook undertook before   19:26:29

16   implementing the new version of the graph.   19:26:32

17   And does this appear to be one of the   19:26:35

18   evaluations that Facebook did of the extent of the   19:26:37

19   use of various permissions that were going to be   19:26:40

20   deprecated?   19:26:44

21   A. Given my understanding of the -- of the   19:26:48

22   date of this slide deck, given it was before the   19:26:50

23   changes were announced and the data contained   19:26:54

24   within, it seems reasonable that this is an output   19:26:57

25   of some of the analysis that was done to understand 19:27:03

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1	the scale of the apps using to-be-deprecated	19:27:07
2	permissions, including the friend permissions.	19:27:14
3	Q. And let's go to the next slide.	19:27:18
4	████████████████████████	████
	██████████████████████████████	████
	██████████████████████████	████
	███████████████	████
	████████████	████
	████████████	████
10	A. I have -- I do not know which apps are	19:27:40
11	being referred to here, like, which apps are the	19:27:44
12	number -- which represent the 31, and I also don't	19:27:47
13	know how that number was derived.	19:27:50
14	So I -- it's hard for me to -- I am unable	19:27:56
15	to -- to answer the question what -- what were	19:27:59
16	██████████████████████████	████
	████	████
	█ ██████████████████	████
	████████████████████	████
	█████	████
	█ ███████████████████	████
	██████████████████	████
	█ ██████████████████	████
	█████████████████████	████
	████████████████	████

1	A. My first step would be to try and identify	19:28:40
2	the author of the deck and to see if they are	19:28:43
3	contactable and to attempt to determine if they	19:28:49
4	recall how this determination was made.	19:28:52
5	Q. Is asking Mark perhaps one of the ways to	19:28:58
6	find the answer to that as well?	19:29:00
7	A. I doubt Mark would know how this slide	19:29:02
8	deck was prepared or what went into determining	19:29:05
9	that number on the screen.	19:29:08
10	Q. And without having any commentary on the	19:29:11
11	fact that Sheryl has more friends than Mark, where	19:29:14
12	would one go to find out what key apps are Sheryl's	19:29:17
13	friends?	19:29:21
14	A. Well, so first of all, you said there that	19:29:22
15	Sheryl has more friends than Mark.	19:29:28
16	The numbers here refer to apps, not	19:29:31
17	friends, to be clear.	19:29:34
18	And the same answer applies here, which is	19:29:35
19	I -- I do not know how this slide deck was created	19:29:40
20	or who created it or how they came to this	19:29:45
21	determination. There's no evidence here of how	19:29:49
22	that was determined.	19:29:54
23	Q. So I can tell you from the metadata that	19:29:55
24	this is from Eddie O'Neil's custodial file.	19:29:57
25	So does that suggest to you that you would	19:30:02

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1	ask -- if he's the author of this deck, you could	19:30:04
2	ask him how he came up with these numbers?	19:30:07
3	A. If he is indeed the author of the deck,	19:30:09
4	it's -- he could be asked. Whether or not he would	19:30:15
5	recall how these numbers were derived is a question	19:30:17
6	for him.	19:30:21
7	Q. Okay. And what is "Generating TPV"?	19:30:23
8	What is "TPV"?	19:30:27
9	A. TPV in this context refers to total	19:30:29
10	payment volume, which is the payments happening in	19:30:31
11	the games, as I understand it, that are being	19:30:39
12	referred to here.	19:30:44
13	Q. Okay. So this appears that when	19:30:47
14	evaluating the deprecation of certain permissions,	19:30:50
15	Mr. O'Neil identified key apps that were generating	19:30:55
16	TPV. Correct?	19:30:59
17	A. Sorry. Can you ask that again? I want to	19:31:02
18	make sure I --	19:31:04
19	Q. Yeah, I'm just trying to understand --	19:31:05
20	sorry, we're talking at the same time, which is my	19:31:07
21	fault.	19:31:10
22	But I'm trying to understand the -- this	19:31:10
23	appears to be an analysis of what APIs were going	19:31:12
24	to be deprecated, but also what apps would be	19:31:16
25	affected by those deprecations. Right?	19:31:20

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1	And so one of the categories here that	19:31:23
2	appears was -- that was being evaluated was whether	19:31:24
3	the app that could be impacted by deprecation was	19:31:27
4	generating TPV.	19:31:32
5	Is that a fair read?	19:31:34
6	A. My understanding is this deck has referred	19:31:36
7	to a range of potentially to-be-deprecated APIs and	19:31:38
8	permissions -- sorry -- specifically, the previous	19:31:46
9	slide refers to permissions that were at this point	19:31:49
10	proposed to be deprecated, publicly -- not publicly	19:31:53
11	available to developers anymore, and the "Key apps"	19:31:59
12	slide is an attempt to quantify the number of apps	19:32:02
13	that the author estimated to be impacted by those	19:32:05
14	deprecations.	19:32:09
15	Q. And what -- is it "Neko"? Is that "Neko	19:32:12
16	spenders"?	19:32:17
17	A. Neko or Neko, that refers to a product	19:32:18
18	that is -- that came to be known as "Mobile App	19:32:24
19	Install Ads."	19:32:27
20	Q. Okay. And what are "Neko spenders"?	19:32:31
21	A. So my understanding is that would refer to	19:32:36
22	apps that were -- in some period of time had spent	19:32:38
23	some money on mobile app install ads.	19:32:42
24	Q. And when you say "spend some money," what	19:32:47
25	does that mean?	19:32:50

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```
1        A.   "Mobile App Install Ads" is an ads          19:32:52

2   product.  And so if a developer wanted to have ads    19:32:57

3   for their app, then they would buy those ads just     19:33:02

4   like any other ad on Facebook.                        19:33:06

5   ████  ████████████████████████████        ████████

    █    ████████████████████████████         ████████

    █    ██████████████████                    ████████

8        A.   I don't know what "Noisy" refers to.        19:33:22

9        Q.   And what about "T0/" -- or "T0/T1           19:33:24

10  partners?"                                            19:33:30

11       Do you know what that refers to?                 19:33:31

12       A.   That's referring to some kind of partner    19:33:33

13  categorization that would have been in use at the     19:33:35

14  time, but there are a number of different ways that   19:33:37

15  the partnership team would have classified and        19:33:40

16  categorized apps over time.                           19:33:46

17       Q.   Do you know what a "T0 partner" is?         19:33:48

18       A.   It would have been some categorization      19:33:51

19  that the platform partnerships team was using, but    19:33:53

20  I don't know exactly what T0 -- the criteria to be    19:33:57

21  classified as a T0 app was.                           19:34:05

22       Q.   And then T1, it -- my understanding is it   19:34:07

23  has to do with the importance of the partner to       19:34:11

24  Facebook.                                             19:34:14

25       Is that consistent with your                     19:34:14
```

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1   understanding?   19:34:16

2   A.   My understanding is there were various   19:34:17

3   tiers of partners, Tier 0 being the top, Tier 1   19:34:20

4   being one below.   19:34:25

5   But again, I -- it's unclear. I am unable   19:34:27

6   to say what was -- why an app would be categorized   19:34:31

7   in Tier 0 versus Tier 1.   19:34:35

8   Q.   And does Facebook classify its partners   19:34:38

9   differently based upon how much revenue Facebook   19:34:43

10   receives from the partner?   19:34:47

11   A.   I don't know how the -- the tiering, as   19:34:53

12   represented here, was -- was determined. My   19:34:56

13   understanding is there would have been a range of   19:34:59

14   factors that would have gone into that tiering   19:35:01

15   determination.   19:35:06

16   Q.   Now, my understanding of the -- of the   19:35:14

17   purpose of allowing an app to have access to friend   19:35:18

18   information was to use that information in the --   19:35:22

19   solely in the context of the person who authorized   19:35:28

20   the app to obtain the information.   19:35:32

21   Is that your understanding?   19:35:34

22   A.   My understanding is that the existence of   19:35:43

23   the ability for apps to access information about a   19:35:50

24   user who used the app and their friends was to   19:35:54

25   build an engaging social experience for that user.   19:35:59

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1	Q. And there were rules at Facebook,	19:36:03
2	developer rules, that limited the use of friend	19:36:06
3	information to the purpose you just described. Is	19:36:09
4	that right?	19:36:12
5	A. There was a range of platform policies	19:36:15
6	that developers -- it was a specific set of	19:36:17
7	platform policies that the -- that developers of	19:36:20
8	the Facebook app -- the developers of apps that	19:36:25
9	used the Facebook Developer Platform would have to	19:36:27
10	agree to.	19:36:32
11	Q. And so if an app gets access to friend	19:36:34
12	data and then uses that information to target the	19:36:39
13	friends of the app users with advertisements, that	19:36:41
14	would be an example of an app using friend	19:36:46
15	information in a way that is -- that violates	19:36:48
16	Facebook's developer policies. Is that right?	19:36:52
17	MR. BLUME: Objection to scope.	19:36:55
18	THE WITNESS: Sorry. I haven't prepared	19:37:00
19	to speak to Facebook's developer policies and	19:37:01
20	precisely what they allowed or prohibited -- and	19:37:04
21	also how Facebook's advertising ecosystem worked.	19:37:09
22	BY MR. LOESER:	19:37:15
23	Q. And based upon your knowledge of the	19:37:19
24	platform, was my statement correct?	19:37:20
25	A. I -- I am not -- I'm not sure I can	19:37:24

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1	confirm exactly that -- that statement. I am not	19:37:33
2	sure, as I sit here today, exactly what the	19:37:37
3	policies were at any given time in the past.	19:37:39
4	Q. Okay. Let me ask one more related	19:37:46
5	question. Perhaps this is something that you are	19:37:48
6	familiar with.	19:37:50
7	If an app gets access to friend data and	19:37:51
8	then sells that friend information to another third	19:37:53
9	party, would that be an example of the app using	19:37:56
10	friend information in a way that is not solely	19:37:59
11	within the app user's experience?	19:38:03
12	A. If an app developer is making data	19:38:10
13	available to another entity that isn't -- that --	19:38:16
14	it's hard -- yeah.	19:38:26
15	It's hard for me to, like, give a specific	19:38:27
16	answer to that based on my understanding of how	19:38:29
17	the -- of what was and wasn't okay in terms of the	19:38:33
18	Facebook Developer Platform policies.	19:38:37
19	Q. Okay. But you described for me Facebook's	19:38:39
20	understanding of how friend information was to be	19:38:43
21	used, which was to create the experience between	19:38:45
22	the user of the app and the app. Right?	19:38:48
23	A. So my answer there was referring to my	19:38:52
24	understanding of the -- the primary reason why the	19:38:56
25	Facebook Platform existed, which was to primarily	19:38:59

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1	allow developers to build engaging social	19:39:04
2	experiences that users could interact with that was	19:39:08
3	valuable to them.	19:39:11
4	Q. And Facebook did not intend in that	19:39:12
5	context for apps to use friend information it	19:39:15
6	obtained from a user outside of the context of the	19:39:18
7	user's experience with that app. Right?	19:39:25
8	A. So there were a number of users -- uses of	19:39:29
9	the Facebook Developer Platform where	19:39:33
10	information -- often publicly available information	19:39:37
11	about a user's activity would be available to an	19:39:40
12	app developer without the user explicitly	19:39:43
13	authorizing the application.	19:39:47
14	Q. And let's confine our answer to	19:39:53
15	information obtained about a friend that was	19:39:55
16	intended for friends only; that wasn't public.	19:39:57
17	And I'm just trying to understand kind of	19:40:01
18	how friend-sharing works. It's not a trick	19:40:04
19	question. I'm just trying to understand if an app	19:40:06
20	obtains friend information but then uses that	19:40:08
21	information for purposes other than the experience	19:40:10
22	of the app user and the app, is that something that	19:40:12
23	is beyond what Facebook intended when it provided	19:40:16
24	access to the friend information?	19:40:20
25	A. So limited to -- limited to the context of	19:40:27

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1	a user having explicitly authorized an application	19:40:30
2	and then that application having access to the --	19:40:36
3	the data made available via the friend permissions,	19:40:39
4	my understanding is that the -- that that	19:40:43
5	information was to be used within the context of	19:40:46
6	the application that the user was using.	19:40:48
7	Q. Did Facebook have any technology making it	19:40:51
8	impossible for apps to use friend data other than	19:40:54
9	in connection with the app user?	19:40:58
10	A. One piece of technology Facebook has, or	19:41:06
11	had, is the privacy settings available governing	19:41:11
12	visibility of content on Facebook.	19:41:18
13	As a result, it's possible that, for	19:41:22
14	example, if we were friends and you posted a post,	19:41:26
15	you could make that post not visible to me, even	19:41:31
16	though we were friends using on-Facebook privacy	19:41:36
17	settings.	19:41:40
18	If you had done that, then that piece of	19:41:41
19	content wouldn't be available via the API if it was	19:41:44
20	being called on my behalf.	19:41:50
21	Q. Okay. And if you have shared information	19:41:52
22	with your friend based upon your privacy setting	19:41:54
23	that allowed friends to have that information, was	19:41:59
24	there technology that prevented an app from --	19:42:01
25	could Facebook have utilized technology that would	19:42:07

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1	prevent that app from getting the friend	19:42:10
2	information since the app is not the friend of the	19:42:13
3	person who posted it?	19:42:15
4	A. So the -- again, which time frame are you	19:42:17
5	referring to here?	19:42:20
6	Q. At any point since 2007.	19:42:22
7	A. Okay. So once a -- once an app makes an	19:42:25
8	API call on behalf of a user and the Facebook API	19:42:32
9	returns that information to the application, then	19:42:38
10	the application or the developer, whether or not	19:42:44
11	that's their servers or the code, technically has	19:42:48
12	access to that information.	19:42:51
13	And once they have that information,	19:42:54
14	the -- there's very little -- there's no technical	19:42:57
15	way for Facebook to prevent it being used outside	19:43:01
16	the use of the application itself.	19:43:06
17	Q. Does Facebook perform financial analysis	19:43:17
18	of the different products it offers?	19:43:20
19	A. That's a very --	19:43:25
20	Sorry, Rob, it looks like you were going	19:43:27
21	to say something.	19:43:30
22	MR. BLUME: I was just going to object to	19:43:31
23	the form.	19:43:33
24	THE WITNESS: Facebook as a company does	19:43:40
25	look at its various products and how they are	19:43:44

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1	performing.	19:43:47
2	BY MR. LOESER:	19:43:47
3	Q. Okay. And do the different products	19:43:48
4	engage in analysis of revenue and the income,	19:43:50
5	et cetera, of that product to -- to Facebook?	19:43:55
6	A. Different products assess their	19:44:01
7	performance in different ways. Ads products, for	19:44:02
8	example, typically would look at revenue as to	19:44:06
9	whether or not they were performing.	19:44:10
10	Q. And what about partnership-based products?	19:44:14
11	Are there partnership-based products?	19:44:18
12	A. Help me understand what you mean by	19:44:21
13	"partnership-based products."	19:44:23
14	Q. Well, you were in the Partnership team.	19:44:25
15	Did it have a product?	19:44:27
16	A. The Partnership team doesn't have	19:44:29
17	products, no.	19:44:30
18	Q. And does it report revenue or income?	19:44:33
19	A. The Partnership -- the Platform	19:44:39
20	Partnerships team would typically assess the	19:44:41
21	utilization of the Facebook Developer Platform	19:44:49
22	product by Platform developers, and income from	19:44:52
23	Platform developers is one of the things that may	19:45:01
24	have been looked at in terms of understanding the	19:45:05
25	performance of the Platform products.	19:45:08

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1	Q. And what types of income did Facebook	19:45:11
2	receive from Platform developers?	19:45:13
3	A. The types of income that Facebook would	19:45:18
4	receive from Platform developers were, broadly:	19:45:21
5	One, ad spend related to the Platform developer's	19:45:25
6	products; and, two, in the case of games that used	19:45:35
7	in-game currency where that game was rendered	19:45:41
8	inside the Facebook Chrome on the web, Facebook	19:45:44
9	would take a cut of the total payment volume inside	19:45:54
10	of that game or app.	19:45:59
11	Q. And does Facebook consider the user data	19:46:07
12	it collects and infers about users valuable?	19:46:09
13	A. Can you help me understand the -- the	19:46:15
14	context, as in -- yeah.	19:46:17
15	Can you help me understand the context	19:46:20
16	you're asking in?	19:46:21
17	Q. Sure. I'll ask more specifically.	19:46:22
18	Did Facebook do any financial analysis of	19:46:24
19	the value of user data it collects and infers about	19:46:26
20	users?	19:46:30
21	A. In -- let me understand. In any way,	19:46:39
22	across any part of the company? Is that what	19:46:41
23	you're asking?	19:46:43
24	Q. Yes. Yes. We can start big and go small.	19:46:44
25	So, in any way.	19:46:47

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1	MR. BLUME: Objection to scope.	19:46:50
2	THE WITNESS: Yeah. It's hard for me to	19:46:52
3	answer that question at the full company level.	19:46:54
4	That's not what I've prepared to testify on.	19:46:57
5	On a personal level, there -- I can say	19:47:00
6	that there are products that the -- where the --	19:47:04
7	where, like, the impact of the -- or the -- it's	19:47:18
8	hard for me to say. I can't give you a very crisp	19:47:22
9	and clear and accurate answer to that -- to that	19:47:26
10	question. It's not what I've testified on, and I'd	19:47:28
11	be giving you an inappropriate answer, I think.	19:47:31
12	BY MR. LOESER:	19:47:36
13	Q. If I wanted to have Facebook answer the	19:47:36
14	question whether it does financial analysis of the	19:47:38
15	value of user data that it collects, where would I	19:47:40
16	go in the company to get information about that?	19:47:44
17	Is that the finance department or -- or	19:47:47
18	where would that get reported?	19:47:50
19	MR. BLUME: Objection. Beyond the scope.	19:47:52
20	THE WITNESS: Yeah, I think different	19:47:57
21	teams assess the performance of their products in	19:47:59
22	different ways, and those products involve	19:48:02
23	different kinds of information.	19:48:05
24	So it's really hard to give you a specific	19:48:07
25	answer to that question. I couldn't give you a	19:48:09

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1	specific answer to that question.	19:48:11
2	BY MR. LOESER:	19:48:15
3	Q. Okay. And has Facebook done any analysis	19:48:15
4	of the value of the data it makes available to	19:48:17
5	third parties through the Facebook Social Graph?	19:48:20
6	MR. BLUME: Objection. Scope.	19:48:24
7	THE WITNESS: I've seen some analysis of	19:48:33
8	the impact of the Platform changes that were	19:48:34
9	proposed, and I've also seen and heard about	19:48:37
10	analysis done of the -- of the use of the Facebook	19:48:43
11	Developer Platform in terms of how people use it	19:48:46
12	and how that contributes revenue to Facebook. But	19:48:51
13	I've -- I don't recall seeing analysis specific to,	19:48:58
14	like, the user data itself.	19:49:01
15	BY MR. LOESER:	19:49:04
16	Q. Okay. Well, walk me through the two types	19:49:06
17	of analyses you just mentioned.	19:49:12
18	MR. BLUME: Objection to scope, but he can	19:49:18
19	in his personal capacity.	19:49:21
20	BY MR. LOESER:	19:49:23
21	Q. Well, let me clarify.	19:49:23
22	Your answer was: "I've seen some analysis	19:49:25
23	of the impact of the Platform changes that were	19:49:26
24	proposed."	19:49:29
25	So what's the analysis that you've seen of	19:49:30

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1	the impact of the Platform changes that were	19:49:32
2	proposed?	19:49:34
3	A. So one of the documents I reviewed in	19:49:38
4	preparation for the testimony today seems to --	19:49:40
5	seems to make an assessment of the various changes	19:49:45
6	that were proposed to be launched and estimates the	19:49:48
7	impact that might have on Facebook's revenues from	19:49:53
8	developers.	19:49:57
9	So I recall reviewing a document of that	19:50:00
10	form.	19:50:02
11	Q. And can you tell me more about that	19:50:03
12	document; who created it and when it was created?	19:50:05
13	A. I don't know who created it or when it was	19:50:10
14	created, but I do know it was -- my understanding	19:50:12
15	is it was previously produced in -- in this	19:50:15
16	litigation. So it should be available to you.	19:50:20
17	Q. Okay. We'll follow up with Mr. Blume and	19:50:28
18	try and pin down that document.	19:50:33
19	And the second thing you said was an	19:50:35
20	assessment of the various changes that were	19:50:39
21	proposed and estimates of the impact they might	19:50:46
22	have on Facebook's revenue from developers.	19:50:48
23	So what was that analysis?	19:50:51
24	A. So I think that's the thing I've just --	19:50:52
25	that's the thing I've just talked about.	19:50:54

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1	Q. Okay. Was there -- I thought you	19:50:56
2	mentioned two different assessments that you saw.	19:50:58
3	A. So that -- that document, I -- I saw in	19:51:03
4	preparation for this case, this testimony.	19:51:06
5	The other thing I recall mentioning is in	19:51:10
6	my personal capacity, I recall there being analysis	19:51:16
7	done of the -- the revenue that Facebook games	19:51:20
8	provided to the Facebook company.	19:51:28
9	But I don't recall a specific document on	19:51:32
10	that, and I have not reviewed a document of that	19:51:36
11	form in reference -- in preparation for this	19:51:38
12	testimony.	19:51:41
13	Q. And this may be covered by what you said	19:51:45
14	before, but has Facebook ever analyzed the	19:51:47
15	financial or other business benefits Facebook	19:51:49
16	obtained by allowing third-party access to Facebook	19:51:52
17	user friends data in particular?	19:51:56
18	MR. BLUME: Objection to scope.	19:52:00
19	THE WITNESS: I don't recall seeing any	19:52:03
20	analysis that was specifically limited to friends	19:52:07
21	data, no.	19:52:12
22	BY MR. LOESER:	19:52:14
23	Q. And what about analysis that was limited	19:52:16
24	to deprecated permissions more broadly?	19:52:19
25	A. I have not seen analysis related to	19:52:24

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1	deprecated permissions specifically, no.	19:52:27
2	Q. And has Facebook ever analyzed the	19:52:35
3	financial or other business impact of continuing to	19:52:37
4	allow certain apps and partners to have access to	19:52:40
5	friend-sharing after publicly deprecating	19:52:46
6	friend-sharing permissions?	19:52:49
7	A. So here we need to be specific when we	19:52:51
8	talk about friend-sharing permissions versus your	19:52:54
9	broader definition of friends data.	19:52:57
10	No, I -- I have not seen and am not aware	19:53:00
11	of any analysis that was done relating to	19:53:04
12	extensions allowing apps to continue to have	19:53:10
13	access -- some apps to continue to have access to	19:53:14
14	the friend permissions after they were more	19:53:17
15	publicly deprecated.	19:53:22
16	Q. And if the question is not friends	19:53:24
17	permissions specifically, but deprecated	19:53:27
18	permissions, does that change your answer?	19:53:30
19	A. I am not aware of any analysis that was	19:53:33
20	done to understand the impact of deprecated	19:53:36
21	permissions in particular.	19:53:40
22	As I testified previously, I -- sorry.	19:53:44
23	Q. Go ahead. I'm sorry.	19:53:46
24	A. As I testified previously, I have seen	19:53:50
25	analysis of the impact of the changes in general,	19:53:53

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1	but not specifically I recall seeing anything	19:53:59
2	related to just the deprecation of permissions.	19:54:03
3	Q. And did Facebook evaluate the loss of	19:54:08
4	revenue that could occur if a Facebook partner or	19:54:13
5	partners stopped doing business with Facebook	19:54:17
6	because Facebook deprecated permissions that the	19:54:20
7	partner used?	19:54:23
8	A. I don't recall seeing any analysis of	19:54:29
9	the -- on an app-specific basis or a	19:54:35
10	partner-specific basis.	19:54:40
11	It's possible that people that worked with	19:54:43
12	that partner might assert a potential loss of	19:54:45
13	revenue, but I don't recall any, you know, formal	19:54:52
14	analysis being done of -- of the financial impact	19:54:55
15	of deprecating something.	19:54:58
16	Q. And you say you don't recall, but I want	19:55:01
17	to make sure I understand what you're saying.	19:55:04
18	Did Facebook do that analysis, do you	19:55:06
19	know?	19:55:10
20	A. I do not know, and I have not seen any	19:55:11
21	evidence in preparation for this that they did.	19:55:13
22	Q. And if you were to find -- to search for	19:55:16
23	the answer to that question, who would you ask?	19:55:19
24	A. I would ask Ime, probably, who was	19:55:26
25	involved in -- who led the Partnerships team around	19:55:35

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1	this time -- sorry, let me be clearer about around	19:55:39
2	this time.	19:55:42
3	In the period 2013 to 2018, I believe, he	19:55:45
4	may be aware of whether or not such analysis was	19:55:51
5	done.	19:55:53
6	Q. So -- sorry, I have to reach for a	19:56:02
7	document.	19:56:05
8	Going back to the notice, on Topic 6, you	19:56:06
9	have -- the last part of that notice calls for	19:56:08
10	testimony about the revenue impact and net profits	19:56:15
11	for Facebook relating to friend-sharing throughout	19:56:19
12	the class period. Correct?	19:56:21
13	A. I'll wait to see till it comes on the	19:56:26
14	screen.	19:56:29
15	Q. Sure. And so I am going to ask you a	19:56:30
16	question -- yeah, I'm going to ask you a question	19:56:36
17	based on the notice, and you can tell me what	19:56:38
18	Facebook's answer is.	19:56:40
19	But what is the revenue impact and net	19:56:41
20	profits for Facebook related to friend-sharing	19:56:44
21	before Facebook publicly deprecated friend-sharing	19:56:46
22	APIs?	19:56:49
23	A. My understanding is that Facebook did	19:56:53
24	not -- has not done analysis as to the revenue	19:56:56
25	impact and net profits related to friend-sharing.	19:57:01

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1	Q. And what is the revenue impact and net	19:57:07
2	profits for Facebook related to friend-sharing	19:57:09
3	after publicly deprecating friend-sharing APIs but	19:57:16
4	continuing to allow friend-sharing for certain apps	19:57:19
5	and partners?	19:57:21
6	A. In preparation for this -- this testimony,	19:57:24
7	I attempted to see whether or not any such analysis	19:57:28
8	has been done.	19:57:33
9	My understanding is that no analysis was	19:57:34
10	done. I am not aware of any analysis having been	19:57:36
11	done about the revenue impact to net profits	19:57:40
12	relating to friend-sharing before or after the	19:57:44
13	deprecation period.	19:57:47
14	Q. And who -- what did you do to educate	19:57:48
15	yourself on that question?	19:57:52
16	A. I spoke to Ime, and I reviewed the	19:57:56
17	document -- several documents provided to me in	19:58:03
18	this case.	19:58:05
19	Q. So I'm about to move on to Topic 7, and	19:58:27
20	we've been going for about an hour, so it's	19:58:30
21	probably a good time to take a break. We also have	19:58:33
22	your notes, and I just need to quickly look at them	19:58:36
23	and see if I have any other questions about Topic 6	19:58:38
24	regarding your notes.	19:58:39
25	If you don't want to take a break, I can	19:58:42

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1	plow ahead, but it's been an hour, and if you want	19:58:42
2	to take a break, that's fine too.	19:58:42
3	A. Yeah, let's just take five minutes. That	19:58:44
4	would be good. I'll just stretch a bit; make sure	19:58:48
5	I'm fresh.	19:58:51
6	THE VIDEO OPERATOR: We're off the record	19:58:52
7	at 7:58 P.M.	19:58:53
8	(Recess from 7:58 P.M. to 8:12 P.M.)	19:58:55
9	THE VIDEO OPERATOR: We're back on the	20:12:47
10	record. It's 8:12 P.M.	20:12:48
11	MR. LOESER: Mr. Cross, we're going to	20:12:56
12	mark as an exhibit the notes that -- that you	20:12:57
13	provided to your counsel who then provided them to	20:13:01
14	us.	20:13:03
15	And if we have time today, we might come	20:13:14
16	back and ask a few questions about them, but for	20:13:17
17	now, I just wanted to mark them as an exhibit. So	20:13:19
18	we can just put them up, introduce them, and move	20:13:22
19	on.	20:13:25
20	(Deposition Exhibit 335 was marked for	20:13:25
21	identification.)	20:13:29
22	BY MR. LOESER:	20:13:30
23	Q. I do have, actually, one -- we don't need	20:13:31
24	to put the exhibit back up, but I had noticed in	20:13:33
25	your notes when I asked you earlier who had	20:13:35

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1	developed friend-sharing, you couldn't recall, but	20:13:38
2	your notes indicate it was Luke Shepherd,	20:13:40
3	Ari Steinberg, and Alex Himmel. Is that correct?	20:13:43
4	A. Those are three names of people that I	20:13:49
5	believe to have been involved in the early	20:13:51
6	development of the Facebook Developer Platform	20:13:53
7	which included sharing friends data as part of the	20:13:55
8	model.	20:14:02
9	Q. And when you say "early development,"	20:14:02
10	what's the time period that you're referring to?	20:14:03
11	A. My understanding is that Ari Steinberg was	20:14:11
12	involved in the 2007/2008 time frame, although I	20:14:14
13	don't have the specifics.	20:14:19
14	Luke Shepherd was involved in the Platform	20:14:21
15	when I joined in September 2010. I'm not sure when	20:14:24
16	his tenure in that space began or ended.	20:14:29
17	And Alex Himmel is another person that I	20:14:36
18	know was involved in the Facebook Developer	20:14:39
19	Platform.	20:14:40
20	Whether or not these folks were	20:14:42
21	specifically involved in the original design of the	20:14:44
22	platform, which included friend-sharing, it's hard	20:14:49
23	for me to know specifically.	20:14:53
24	Q. Okay. Thank you.	20:14:57
25	Let's go back to the notice. We're going	20:14:59

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1	to move on to Topic 7.	20:15:00
2	It's a little longer, so I won't read the	20:15:08
3	whole thing into the record, but I gather you have	20:15:10
4	read all of Topic 7 and you are prepared to testify	20:15:12
5	about this topic.	20:15:19
6	And you've described what you did to	20:15:34
7	prepare for Topic 6.	20:15:36
8	When you prepared for Topic 6, were you	20:15:38
9	also at the same time preparing for Topic 7?	20:15:40
10	A. That's correct. I was preparing for the	20:15:44
11	two in parallel.	20:15:45
12	Q. And is there anybody that you talked to at	20:15:49
13	Facebook to get information about Topic 7 that is	20:15:51
14	different than the folks that you talked to about	20:15:54
15	Topic 6?	20:15:57
16	A. No. The set of people I talked to, I	20:15:59
17	talked to about all of the matters I was preparing	20:16:03
18	to testify on.	20:16:05
19	Q. And is there any component of Topic 7 that	20:16:14
20	you only have knowledge of based upon the	20:16:17
21	preparations that you did for this deposition?	20:16:19
22	A. Yes. I think 7-a, each whitelisted	20:16:24
23	entity; b, only -- so b, I have some personal	20:16:33
24	experience there; c, I also have some personal	20:16:46
25	experience.	20:16:56

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1	D -- could you scroll d onto the screen,	20:17:02
2	please? There you go. That was easy.	20:17:05
3	So I think I have some personal experience	20:17:08
4	in all, but with 7-a, primarily I'm relying on the	20:17:11
5	forensic work that was done after my involvement in	20:17:19
6	the Facebook Developer Platform to answer those	20:17:25
7	questions.	20:17:29
8	Q. And based on your preparation with regard	20:17:31
9	to Topic 7, do you believe you are reasonably	20:17:33
10	educated to testify on these matters?	20:17:37
11	A. I believe I am reasonably educated to	20:17:39
12	testify. I've done as much as I could to prepare.	20:17:41
13	Q. And last night, your counsel informed us	20:17:53
14	that you are not prepared to testify about call	20:17:54
15	logs, APIs, or permissions granted to any	20:17:57
16	particular entity.	20:18:00
17	And is that -- is that your understanding?	20:18:03
18	A. Yeah. We -- I want to make sure that I --	20:18:12
19	in answering those questions, I want to make sure I	20:18:15
20	have done as much preparation as possible, and I	20:18:17
21	think a couple more -- a bit more time to make sure	20:18:25
22	I can speak to those topics would be valuable.	20:18:28
23	Q. Okay. And over the course of your	20:18:33
24	employment at Facebook, did you develop any	20:18:34
25	personal knowledge of call logs, APIs, or	20:18:36

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1	permissions granted to any particular entity?	20:18:40
2	A. I developed -- I was in -- I had access to	20:18:44
3	and would have used some of the tools that would	20:18:48
4	help analyze call logs and Platform API usage and,	20:18:56
5	in the course of doing that, would have seen	20:19:03
6	information to do with particular apps.	20:19:05
7	But that's a long time ago, and I wouldn't	20:19:10
8	remember the specifics, and I don't know what in	20:19:13
9	general Facebook would have access to today, many	20:19:15
10	years after -- many years after my time directly	20:19:18
11	involved in this stuff.	20:19:23
12	Q. Okay. Thank you.	20:19:24
13	Mr. Cross, please explain what it means to	20:19:27
14	"whitelist" an app or a partner in the context of	20:19:29
15	access to APIs.	20:19:33
16	A. The -- can you be specific?	20:19:47
17	Which APIs are we referring to here?	20:19:49
18	Q. Just generally, back to making sure we	20:19:52
19	have the terminology down and I'm using the right	20:19:54
20	words to talk about what we're discussing, there's,	20:19:57
21	obviously, a lot of documents that talk about,	20:19:59
22	refer to, and use the term "whitelist," and I	20:20:01
23	gather that's a term that can be applied in a	20:20:05
24	variety of contexts.	20:20:07
25	But when it's connected to granting access	20:20:08

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1	to particular APIs or -- I'm continually getting	20:20:11
2	this wrong -- permissions, does it have a	20:20:17
3	particular meaning?	20:20:20
4	A. In the context -- we referred to in the	20:20:21
5	context of the Facebook Developer Platform again?	20:20:23
6	Q. Yeah. Yes.	20:20:26
7	A. So in that context, I understand	20:20:32
8	"whitelisting" to refer to where a given	20:20:33
9	application is added to a list of applications	20:20:38
10	that -- whose behavior or whose -- the behavior of	20:20:45
11	the API, and the Facebook Developer Platform is	20:20:50
12	modified in some way for those applications.	20:20:53
13	Q. And consistent with that definition, when	20:21:05
14	did Facebook first start whitelisting any app or	20:21:07
15	partner?	20:21:10
16	A. So the -- given that the concept of	20:21:14
17	whitelisting in general applies to making -- you	20:21:16
18	know, modifying the changes to the -- modifying the	20:21:21
19	behavior of the Facebook Developer Platform, then	20:21:24
20	whitelisting in some form has been used	20:21:27
21	consistently throughout the development of the	20:21:31
22	Facebook Developer Platform in some way.	20:21:35
23	Q. And, again, I want to make sure I have the	20:21:46
24	technology correct, but what does it mean to	20:21:48
25	whitelist friend-sharing APIs for an app?	20:21:52

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1	Or let me put it this way: What does it	20:21:55
2	mean to whitelist an app's ability to collect	20:21:58
3	friend-sharing data?	20:22:00
4	A. So this would refer to what we mean by	20:22:06
5	"friend-sharing data." In this context, one way	20:22:11
6	that that could have manifested is where an app has	20:22:20
7	access to APIs and permissions which were not	20:22:28
8	generally available to other Facebook developers	20:22:33
9	and applications at the time.	20:22:38
10	Q. Okay. And I've seen in Facebook's	20:22:42
11	documents "whitelisting" used in reference to apps,	20:22:45
12	but I've also seen it used in reference to	20:22:50
13	partners.	20:22:52
14	Is there a different definition that	20:22:53
15	Facebook uses when thinking of whitelisting	20:22:55
16	partners in the context of the Platform?	20:22:59
17	A. So back to my original definition of	20:23:04
18	"application" being a very specific entity in the	20:23:06
19	Facebook Developer Platform ecosystem, a partner	20:23:08
20	would refer to an entity, a -- for example, a	20:23:14
21	company. And that company may have several, one or	20:23:17
22	more, Facebook applications, and those applications	20:23:24
23	may or may not have been whitelisted for	20:23:32
24	alternative API behavior.	20:23:35
25	So in that context, you know, when a -- a	20:23:38

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1	partner is -- if you see the phrase "partner has	20:23:41
2	been whitelisted," what specifically happens in	20:23:45
3	the -- in the -- in the code base is that the	20:23:48
4	applications owned -- the Facebook applications	20:23:54
5	owned and maintained by that partner, the app IDs	20:23:59
6	have been granted some modification to the standard	20:24:05
7	API behavior.	20:24:09
8	Q. And through those modifications, those	20:24:12
9	partners, vis-à-vis their apps or, if it's a	20:24:15
10	developer, the developer vis-à-vis its app would	20:24:19
11	gain access to friend data that would not otherwise	20:24:23
12	have been available to that app or partner.	20:24:28
13	Is that a fair description?	20:24:33
14	A. Well, it's a wide range of whitelists and	20:24:35
15	capabilities that were in the system. Many of	20:24:39
16	them, in fact, my understanding is the vast	20:24:44
17	majority of them were not related to friend data at	20:24:47
18	all.	20:24:49
19	Q. Okay. And, in fact, there's plenty of	20:24:54
20	discussion in Facebook documents about the other	20:24:56
21	permissions that were deprecated with Version 2	20:24:58
22	that also were whitelisted for certain apps and	20:25:03
23	partners. Right?	20:25:07
24	A. There's -- when you say "whitelisted,"	20:25:09
25	what time period are you referring to here?	20:25:13

1	It's very specific, given that	20:25:15
2	whitelisting as a concept is something that's very	20:25:17
3	common in the industry and will have been used in	20:25:21
4	this context for many years.	20:25:24
5	Q. Sure. Is the use of whitelisting	20:25:26
6	vis-à-vis the Facebook Platform, did that mean	20:25:30
7	something different at different times in	20:25:35
8	Facebook's lifespan?	20:25:38
9	A. Well, the general definition of	20:25:42
10	whitelisting in the context of the Facebook	20:25:44
11	Platform is that by being on a whitelist, you get	20:25:46
12	some kind of different behavior -- the Platform	20:25:50
13	behaves in some kind of different way to people not	20:25:54
14	on the whitelist.	20:25:57
15	Exactly what that behavior is depends on	20:25:59
16	specifically what the capability is.	20:26:02
17	And so, again, over time, the high -- at	20:26:06
18	the conceptual level, the concept of whitelisting	20:26:11
19	hasn't changed, but exactly which whitelists	20:26:15
20	existed, for what purpose they were used, and who	20:26:18
21	had access to them at any given time will have	20:26:21
22	changed considerably over time.	20:26:23
23	Q. Okay. And so we've talked about	20:26:26
24	whitelisting.	20:26:28
25	Let's talk about private APIs for a	20:26:29

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1	minute.	20:26:32
2	Does Facebook conceive of private APIs as	20:26:32
3	something different than whitelisting?	20:26:36
4	A. I think we discussed the definition of	20:26:42
5	private APIs earlier in the -- in the testimony.	20:26:44
6	So that would be, in my -- in my determination,	20:26:46
7	APIs or behaviors which were not available -- in	20:26:55
8	this case, "private APIs" would typically refer to	20:27:01
9	APIs or permissions that were not generally	20:27:04
10	available.	20:27:06
11	Whitelisting is the concept of who has	20:27:07
12	access to the private APIs, but there is also	20:27:10
13	whitelisting which is nothing to do with private	20:27:15
14	APIs or permissions in any way.	20:27:19
15	Q. And your answer probably helps to explain	20:27:22
16	why there is some confusion in the documents about	20:27:25
17	this because these terms do seem to get -- they	20:27:27
18	seem overlapping but also different; so I want to	20:27:30
19	make sure I understand.	20:27:33
20	The only way an app that is created by a	20:27:34
21	developer that is not a partner with Facebook can	20:27:40
22	get access to publicly deprecated APIs is through a	20:27:43
23	whitelist. Right?	20:27:47
24	A. That would depend on the precise time	20:27:50
25	we're talking about. It would also depend on when	20:27:53

1	the application was created.	20:27:56
2	Q. Okay. Well, let's talk about 2014 to the	20:27:59
3	present.	20:28:02
4	Is there a way other than a whitelist for	20:28:04
5	a developer or an app that is not considered a	20:28:07
6	partner of Facebook's to get access to publicly	20:28:10
7	deprecated permissions?	20:28:13
8	A. Via permission being publicly	20:28:21
9	deprecated -- let's take an example, I think, is	20:28:23
10	the easiest way to answer that question.	20:28:26
11	So the -- where permissions which were	20:28:28
12	publicly available to API Version 1 which were not	20:28:33
13	publicly available in API Version 2, for	20:28:37
14	applications that originally could call API	20:28:41
15	Version 1 that later could only call API Version 2,	20:28:45
16	when that public deprecation was complete, the only	20:28:52
17	way to access those publicly deprecated permissions	20:28:56
18	would have been to be on a whitelist; one or more	20:29:01
19	whitelists.	20:29:06
20	Q. And so developers -- well, let's start	20:29:09
21	with apps.	20:29:12
22	Apps could be on that whitelist, right?	20:29:13
23	A. In the context of the Facebook Developer	20:29:17
24	Platform and specifically referring to app-based	20:29:18
25	whitelisting -- there are other forms of	20:29:21

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1	whitelisting available -- then, yes, the	20:29:23
2	application ID would have been on a whitelist.	20:29:28
3	Q. And partners could be on a whitelist too.	20:29:33
4	But in order for that to be functional, they had to	20:29:39
5	have a private API?	20:29:41
6	A. Sorry. I think we're getting our concepts	20:29:44
7	mixed up here, and it's getting hard to answer --	20:29:47
8	answer the questions.	20:29:50
9	So how do you want to proceed? I feel	20:29:52
10	like we may need to reclarify some of these	20:29:56
11	definitions because you're mixing them up in your	20:29:59
12	questions.	20:30:02
13	Q. All I'm trying to do is figure out what	20:30:03
14	the distinction is between a whitelist and a	20:30:05
15	private API, and specifically in the context of	20:30:08
16	giving a third-party access to deprecated	20:30:10
17	permissions after 2014.	20:30:12
18	So is there a difference between, in that	20:30:14
19	context, a whitelist and a private API?	20:30:16
20	A. Yes. As I previously testified, a	20:30:20
21	whitelist is a -- a mechanism by which -- in the	20:30:22
22	context of the Facebook Platform, an app ID is	20:30:26
23	specified in some way as having alternative -- you	20:30:30
24	know, having a different API behavior than happens	20:30:33
25	that are not on the whit list.	20:30:37

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1	Private APIs are -- some of the things	20:30:39
2	that you could be whitelisted for, but there are	20:30:43
3	other things that you could also be whitelisted	20:30:45
4	for. For example, rate limit behavior. Different	20:30:48
5	rate limit behavior. Right?	20:30:51
6	So whitelisting is the concept by which an	20:30:53
7	application ID, in the -- sorry.	20:30:56
8	Whitelisting is the concept by which an	20:30:59
9	application ID in the context of the Facebook	20:31:02
10	Platform is offered some deeper, nonstandard, or	20:31:03
11	nonpublic behavior, different behavior.	20:31:09
12	And then there are some whitelists,	20:31:11
13	specifically called "capabilities," that would	20:31:16
14	determine exactly what behavior those applications	20:31:18
15	had that was different to the standard.	20:31:23
16	Q. Okay. And are private APIs established	20:31:28
17	through a contract between Facebook and a Facebook	20:31:30
18	partner?	20:31:32
19	A. Not always. Not always. There -- again,	20:31:38
20	there are a number of private APIs and a number of	20:31:42
21	different private behaviors -- different behaviors.	20:31:45
22	Some of those would be governed -- granted under a	20:31:49
23	contract; others would not.	20:31:53
24	For example, rate-limiting; you wouldn't	20:31:56
25	necessarily expect a developer to agree to a	20:31:58

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1	contract to be on the rate-limit whitelist.	20:32:01
2	Q. What is a "rate-limit whitelist"?	20:32:06
3	A. So "rate limits" refers to the number of	20:32:09
4	API calls that an application can make within a	20:32:14
5	given time period in a number of different,	20:32:17
6	complicated ways.	20:32:20
7	There's the standard set of how the rate	20:32:22
8	limits work.	20:32:26
9	And then, for some applications that	20:32:27
10	needed to operate differently, then there was a	20:32:32
11	whitelist that allowed those rate limits to be	20:32:35
12	changed for certain applications.	20:32:39
13	And so, again, that's an example of a	20:32:43
14	whitelist, which is a concept implemented by a	20:32:45
15	capability, which is a specific thing that modified	20:32:49
16	the behavior of the API for the people on the	20:32:53
17	whitelist that was not in any way related to	20:32:56
18	friends data.	20:32:59
19	Q. And so one of the ways private APIs were	20:33:01
20	used at Facebook was to enable certain Facebook	20:33:05
21	partners to continue to have access to friends	20:33:08
22	data. Right?	20:33:11
23	A. Can you be specific as to what time period	20:33:14
24	you're talking about here? Because this -- the	20:33:16
25	time periods here matter greatly in the specificity	20:33:18

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1	of my answers.	20:33:22
2	Q. So when did private APIs first appear at	20:33:24
3	Facebook?	20:33:29
4	A. The -- the concept of private API, I --	20:33:33
5	you're -- I'm referring to any API or permission	20:33:37
6	that was not generally available.	20:33:41
7	When the Facebook Developer Platform was	20:33:47
8	launched, it was launched with launch partners.	20:33:49
9	Actually, a better example is, let's say,	20:33:52
10	Facebook Connect in 2008. There were a number	20:33:55
11	of -- Facebook Connect as a product was -- before	20:33:59
12	it was launched -- not publicly available; and yet	20:34:05
13	on launch day, there were a number of partners that	20:34:08
14	had built integrations with it.	20:34:11
15	Before the launch, you could consider	20:34:14
16	Facebook Connect a private API; and, therefore,	20:34:16
17	access to it was governed by a whitelist.	20:34:20
18	After the launch, Facebook Connect was	20:34:23
19	generally available to all developers, and so you	20:34:25
20	didn't need to be on a whitelist to access it.	20:34:28
21	So whitelists are an industry-standard way	20:34:31
22	of modifying API behavior in certain circumstances,	20:34:34
23	launching new products, and offering them to your	20:34:39
24	launch partners in advance of them being generally	20:34:43
25	available.	20:34:45

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1	And, in the context of the Facebook	20:34:48
2	Platform in this litigation, it's also possible to	20:34:50
3	use a whitelist to grant some developers and	20:34:57
4	partners access to permissions that had been	20:35:01
5	removed from other developers.	20:35:04
6	Q. Okay. And when was the first time that	20:35:09
7	partners obtained access to publicly deprecated	20:35:11
8	friend permissions via a private API?	20:35:18
9	(Rose Ring joined the deposition.)	20:35:21
10	THE WITNESS: The -- strange noise.	20:35:25
11	So, specifically, when it comes to friend	20:35:28
12	permissions, as a set of things that were	20:35:32
13	deprecated, then up until beginning April 30, 2015,	20:35:35
14	if your app had been created before April 30, 2014,	20:35:44
15	then you would have access to those permissions.	20:35:50
16	When the deprecation of API 1 -- the	20:35:55
17	public deprecation of API V1 began on April 30,	20:36:00
18	2015, that's when the -- that's the beginning where	20:36:03
19	an application that would otherwise have lost	20:36:07
20	access to their friend permissions could have	20:36:09
21	continued to access them if they were on a	20:36:13
22	whitelist.	20:36:18
23	BY MR. LOESER:	20:36:19
24	Q. Through private APIs.	20:36:19
25	A. Well, via being on a whitelist.	20:36:22

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1	In this case, we're specifically referring	20:36:25
2	to friend permissions, which is, I think, what your	20:36:27
3	original question was.	20:36:30
4	Q. And what is the "Capability" tool at	20:36:33
5	Facebook?	20:36:36
6	A. The Capability tool is an internal tool	20:36:39
7	used at Facebook to manage which application -- to	20:36:42
8	manage applications and whitelists.	20:36:47
9	(Discussion off the record.)	20:36:50
10	MS. RING: I am very sorry. This is	20:37:12
11	Rose Ring, and I am counsel for Meta. I'm sorry	20:37:12
12	for not announcing myself.	20:37:16
13	BY MR. LOESER:	20:37:26
14	Q. And, Mr. Cross, you were starting to	20:37:28
15	describe the Capability tool, so keep going.	20:37:31
16	A. So the Capability tool is an internal tool	20:37:35
17	at Facebook Meta that's used to manage which	20:37:39
18	applications have access to which capabilities; a	20:37:44
19	"capability" being a -- a mechanism for changing	20:37:51
20	the -- modifying the behavior of the Facebook	20:37:58
21	Developer Platform.	20:38:01
22	So with an application having access to a	20:38:02
23	capability, you would say it had been	20:38:05
24	"whitelisted."	20:38:07
25	Q. And for what period of time has the	20:38:09

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1	Capability tool been in existence?	20:38:13
2	A. My understanding is it was built in around	20:38:16
3	2011 and replaced a previous tool that did a	20:38:20
4	similar job.	20:38:30
5	But the development, as I understand it,	20:38:31
6	began in around 2011.	20:38:33
7	Q. And do you know what the previous tool was	20:38:36
8	called?	20:38:38
9	███ ███████████████████	██████
	██ ████████████	██████
11	Q. Okay. It seems like it had bold	20:38:47
12	ambitions.	20:38:49
13	███████████████████████████	██████
14	and replaced by the capability tool?	20:39:01
15	A. My understanding is that the Capabilities	20:39:04
16	████████████████████████	██████
17	apps and which whitelists they had access -- which	20:39:12
18	capabilities they had access to.	20:39:17
19	Q. And do you know why it was called	20:39:19
20	████████████	██████
21	A. I do not.	20:39:23
22	Q. And what are "Gatekeepers"?	20:39:26
23	A. So a Gatekeeper is -- or Gatekeepers.	20:39:30
24	Gatekeeper is a tool at Meta which is widely used	20:39:34
25	to gate access to features within the Facebook apps	20:39:38

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1	and services, including the Facebook app itself and	20:39:47
2	a number of other services inside the company.	20:39:56
3	"Gatekeepers" refers to the set of checks	20:39:59
4	that exist in code to determine who and what has	20:40:09
5	access to which features.	20:40:14
6	I think the best way to explain it is with	20:40:16
7	an example.	20:40:18
8	Typically, when Facebook develops a new	20:40:20
9	feature, the engineers will -- will gate that	20:40:22
10	feature behind a Gatekeeper.	20:40:29
11	So let's imagine Facebook Dating. So the	20:40:31
12	team working on Facebook Dating would be working on	20:40:36
13	that feature. That feature would be gated by a	20:40:39
14	gatekeeper or multiple gatekeepers, and then the	20:40:44
15	Gatekeeper tool would be used to determine who had	20:40:48
16	access to Facebook Dating as a feature.	20:40:50
17	And so Gatekeeper is a mechanism by which	20:40:54
18	Meta typically controls who has access to which	20:41:00
19	features across many aspects of our business.	20:41:04
20	Q. So the Capabilities tool is more or less a	20:41:11
21	tracking device, and the Gatekeeper is more or less	20:41:13
22	a functional system.	20:41:17
23	Is that a fair description?	20:41:19
24	A. I wouldn't characterize them that way.	20:41:20
25	They both, in some ways, do a similar job.	20:41:22

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1	The Gatekeeper tool is widely used at Meta	20:41:26
2	to manage all kinds of conditional access to	20:41:32
3	things.	20:41:37
4	The Capabilities tool is specifically just	20:41:38
5	used for the Facebook Developer Platform and how to	20:41:41
6	manage which applications have access to which	20:41:47
7	additional features.	20:41:51
8	Q. Okay. So if you wanted to identify every	20:41:52
9	single app that had been whitelisted and, because	20:41:54
10	of that, received deprecated permissions, would all	20:41:59
11	of your information be in the Capability tool, or	20:42:03
12	would you also need to look at the Gatekeeper tool?	20:42:06
13	A. My understanding is that most of the	20:42:11
14	whitelists -- most of the way in which publicly	20:42:16
15	deprecated permissions were made available to	20:42:23
16	applications was via the Capabilities tool.	20:42:28
17	There was, as I understand it, some	20:42:32
18	whitelists managed by Gatekeeper, and an effort was	20:42:36
19	undertaken to migrate that management from	20:42:40
20	Gatekeeper to the Capabilities tool for	20:42:42
21	consistency.	20:42:45
22	Q. And when was that done?	20:42:46
23	A. I don't have the information as to when	20:42:50
24	that was done.	20:42:52
25	Q. So, today, is the Capability tool the more	20:42:54

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1	complete set of information on whitelisted	20:42:58
2	entities?	20:43:01
3	A. When it comes to Facebook Developer	20:43:02
4	Platform and app IDs being whitelisted, my	20:43:04
5	understanding is that the Capabilities tool is the	20:43:09
6	primary and most complete system that tracks which	20:43:11
7	apps have access to which capabilities.	20:43:17
8	Q. And what is "Sitevars"?	20:43:20
9	A. Sitevars is another mechanism that is used	20:43:25
10	at Meta to control and modify the behavior of -- of	20:43:30
11	various products. It has a different set of	20:43:36
12	features the Gatekeeper and the Capabilities tool	20:43:39
13	do not have.	20:43:45
14	Q. And are there entities that have access to	20:43:46
15	publicly deprecated permissions tracked by Sitevars	20:43:48
16	that are not tracked by the Capabilities tool?	20:43:52
17	A. My understanding, but -- from talking to	20:43:56
18	the engineers involved in this is that no, Sitevars	20:43:59
19	would not be a way of determining whether or not an	20:44:06
20	application had access to publicly deprecated	20:44:11
21	permissions.	20:44:14
22	MR. LOESER: Okay. If we could have	20:44:18
23	Tab 9.	20:44:26
24	(Deposition Exhibit 336 was marked for	20:44:26
25	identification.)	20:44:26

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1	MR. LOESER: I'm going to mark the next	20:44:41
2	exhibit. This is Exhibit 336. The Bates number on	20:44:42
3	this is FB-CA-MDL-00200051.	20:44:53
4	And you're looking at, Mr. Cross, an email	20:44:59
5	from you to Zhen Fang, cc to Jackie Chang and	20:45:02
6	Christopher Blizzard, October 31, 2013, "Subject:	20:45:09
7	Docs for Private Platform/Capabilities."	20:45:14
8	Do you see that?	20:45:17
9	A. I do.	20:45:18
10	Q. And do you recall writing this email?	20:45:20
11	A. I do not recall writing it, but I have	20:45:24
12	seen this document as part of my preparation for my	20:45:28
13	testimony today.	20:45:31
14	Q. Okay. And you write:	20:45:32
15		
22	Q. And do you recall -- or explain for me if	20:45:53
23	Facebook had a tough time figuring out what all of	20:45:56
24	the -- what all was supposed to be included on the	20:46:00
25	Capabilities tool or who all had been whitelisted	20:46:03

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1	at this time.	20:46:11
2	MR. BLUME: Objection. Compound.	20:46:12
3	THE WITNESS: Yeah. Could you separate	20:46:13
4	the question into two parts because I think the	20:46:14
5	answer -- the answer may be different depending on	20:46:17
6	which part I'm answering.	20:46:20
7	BY MR. LOESER:	20:46:22
8	Q. Sure. It looked like, based upon your	20:46:22
9	email here, that tracking the capabilities that	20:46:24
10	apps had was at this time disorganized and	20:46:28
11	difficult.	20:46:31
12	Is that fair?	20:46:34
13	A. What I -- what's being referred to here is	20:46:35
14	to do with the capabilities themselves and what	20:46:39
15	their behavior was; what each individual capability	20:46:45
16	did or could do.	20:46:50
17	So that's what this is referring to.	20:46:55
18	Q. And so you're proposing here creating a	20:46:59
19	tool that would allow Facebook to better understand	20:47:02
20	and organize the capabilities that the different	20:47:04
21	apps have. Right?	20:47:08
22	A. No. What I'm referring to here is the --	20:47:12
23	the idea, or the request, to be able to gate	20:47:16
24	documents on the Facebook Developer website based	20:47:21
25	on whether or not the viewer of the website had --	20:47:26

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1	was a developer of an app that had a specific	20:47:32
2	capability.	20:47:34
3	Q. So what problem were you trying to solve	20:47:36
4	here?	20:47:38
5	Or let me ask it another way.	20:47:41
6	What problem was Facebook trying to solve	20:47:43
7	here?	20:47:45
8	A. What Facebook is trying to solve here is a	20:47:46
9	way to automatically control whether or not a given	20:47:49
10	developer user -- so an individual person -- had	20:47:57
11	the ability to see a document on the Facebook	20:48:01
12	Developer website that was only visible to them if	20:48:04
13	they were the developer of an application that	20:48:08
14	had -- was granted a particular capability.	20:48:11
15	MR. LOESER: Okay. We can go to the next	20:48:30
16	exhibit, Tab 10.	20:48:32
17	(Deposition Exhibit 337 was marked for	20:48:36
18	identification.)	20:48:40
19	BY MR. LOESER:	20:48:53
20	Q. So as we're waiting for the document,	20:48:53
21	Mr. Cross, as we've discussed already today, with	20:48:55
22	the implementation of Graph API Version 2, Facebook	20:48:58
23	had decided to deprecate a number of permissions,	20:49:00
24	right, and had come up with a list of the	20:49:06
25	permissions that would be deprecated.	20:49:09

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1	Is that an accurate description?	20:49:11
2	A. As part of API Version 2 launch, Version 2	20:49:14
3	contained -- there were a number of permissions	20:49:18
4	that were not available to API Version 2 in general	20:49:20
5	that were available in API Version 1.	20:49:24
6	Q. And so if you look at Exhibit 337, which	20:49:30
7	is a -- which is a document that is captioned	20:49:32
8	███████████████████████████ ███████	
9	Do you see that?	20:49:49
10	A. I do see that.	20:49:50
11	Q. And this appears to be a document that was	20:49:50
12	describing the changes that would be made to the	20:49:52
13	platform in the transition from Version 1 to	20:49:58
14	Version 2. Right?	20:50:01
15	A. It seems to talk about those changes, but	20:50:04
16	it's not clear to me when this document was	20:50:06
17	authored or the audience of the document.	20:50:09
18	Q. Okay. At the very top of the document,	20:50:14
19	you can see that it was authored -- it's a little	20:50:15
20	faint, but it's June 5, 2014.	20:50:18
21	Do you see that?	20:50:22
22	A. I see that there, but it's not clear to me	20:50:24
23	that this is when the document was authored. That	20:50:26
24	may have been when the document was captured. It's	20:50:31
25	hard to read from this exactly what this -- where	20:50:35

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1	this document was posted. It seems to contain --	20:50:40
2	Q. Okay. And I'll just --	20:50:48
3	A. Yeah, it -- I'm not clear -- I'm not clear	20:50:50
4	when this document was authored or whether or not	20:50:53
5	that date -- what that date at the top right	20:50:55
6	pertains to.	20:50:58
7	MR. LOESER: Okay. And just for the	20:50:59
8	record, I'll note that the metadata of this	20:51:00
9	document indicates that it was created June 5,	20:51:03
10	2014. The author is Gillian Dunne, and the	20:51:06
11	custodian for the document was Bill Fusz.	20:51:12
12	But I'm just noting that for the record,	20:51:15
13	and perhaps it provides you some context.	20:51:18
14	But all I want to do with this document is	20:51:20
15	look at -- if you go down to the bottom of the	20:51:22
16	first page, there is a statement: "Permissions no	20:51:24
17	longer available in V2.0."	20:51:29
18	Q. And do you see there's a list that begins	20:51:33
19	there and goes onto the next page?	20:51:35
20	A. I do see that.	20:51:37
21	Q. And included in that there's the category	20:51:40
22	that says: "All friends_* permissions have been	20:51:44
23	removed," and then it lists all of them?	20:51:48
24	A. I see a list of permissions, yes.	20:51:51
25	Q. And above that, there's also a number of	20:51:54

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1	other permissions.	20:51:58
2	Now, does this list of deprecated	20:52:02
3	permissions include all permissions that provided	20:52:05
4	for the sharing of friend data?	20:52:09
5	A. Can you -- in this context, can you help	20:52:19
6	me understand what you mean by "friends data"?	20:52:21
7	Q. Yeah. We earlier talked quite a bit about	20:52:25
8	different APIs that didn't have the word "friends"	20:52:27
9	in the permissions but, based on how they worked,	20:52:33
10	resulted in an app's ability to access information	20:52:35
11	about a user's friends.	20:52:39
12	Do you recall that testimony?	20:52:41
13	A. Yes, I recall that testimony.	20:52:42
14	Q. And so looking at this list here, does it	20:52:45
15	appear to you that this removes -- indicates that	20:52:47
16	the deprecated permissions will cover all of the	20:52:54
17	different permissions that existed at the time that	20:52:57
18	allowed access to friends data?	20:53:00
19	A. No. This looks relatively complete in	20:53:06
20	terms of the -- the friends permissions that	20:53:10
21	allowed an app access to a friend's data in terms	20:53:15
22	of the specific things listed here.	20:53:22
23	Your definition earlier was -- included	20:53:25
24	things like a friend's comments on my photos.	20:53:32
25	Through that definition, then other	20:53:40

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1	permissions, including, for example, user_photos,	20:53:42
2	would have also emitted some friends' data;	20:53:46
3	specifically, the comments that they had made on my	20:53:55
4	photos.	20:53:57
5	So that is not a set of things that was	20:53:58
6	removed in API Version 2.	20:54:01
7	What was removed is this list of	20:54:03
8	permissions which, for example, would have	20:54:05
9	allowed -- the friends_photos permission would have	20:54:08
10	allowed an app to access the photos of an app-using	20:54:12
11	user's friends.	20:54:17
12	Q. And at the time that Facebook was	20:54:19
13	analyzing and identifying all of the permissions	20:54:20
14	that provided access to friends data, did Facebook	20:54:25
15	make a list that included every single one of those	20:54:30
16	permissions so that it could identify whether there	20:54:33
17	was any friend-sharing that would be still	20:54:37
18	publicly -- still be a publicly available API?	20:54:41
19	A. No. The focus of the deprecations	20:54:48
20	announced in Version 2 was the removal of the	20:54:50
21	friend permissions and the other permissions that	20:54:53
22	are represented here.	20:54:56
23	Q. Okay. And when you say "friend	20:54:59
24	permissions," you mean the ones that had the word	20:55:00
25	"friends" in them?	20:55:03

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1	A. When I said "friend permission," that	20:55:05
2	specifically refers to the permissions that have	20:55:07
3	the word "friend" in them.	20:55:10
4	And by "other permissions," I'm referring	20:55:12
5	to the ones listed above; for example -- I'm trying	20:55:14
6	to give an example -- like, manage_friend lists,	20:55:27
7	for example.	20:55:31
8	Q. Now, if we move up this document back to	20:55:33
9	the first page, there's a heading: "New features	20:55:36
10	available in Version 2.0."	20:55:40
11	Do you see that?	20:55:42
12	A. I do.	20:55:43
13	Q. And there is a list of APIs that we've	20:55:43
14	discussed: "Taggable Friends, Invitable Friends,	20:55:47
15	Social Context."	20:55:51
16	And there's one, "Business Mapping API,"	20:55:51
17	which we haven't discussed, and another one that	20:55:53
18	looks like it says "Tagged Places API."	20:55:56
19	Do you see that?	20:55:59
20	A. I do see that.	20:55:59
21	Q. And for Taggable Friends, Invitable	20:56:01
22	Friends, Social Context, those are all permissions	20:56:06
23	that it appears did not exist prior to Version 2.0	20:56:09
24	but were going to be introduced at this time.	20:56:13
25	Is that a fair read?	20:56:16

1	A. These are specifically -- these are APIs	20:56:18
2	that were introduced in Version 2 that were not	20:56:20
3	previously available.	20:56:26
4	These are not permissions; these an APIs.	20:56:27
5	Q. And a number of those APIs that we've	20:56:29
6	discussed did provide access to certain friend	20:56:31
7	information of users not using the apps that would	20:56:33
8	be -- that would have access to those APIs. Right?	20:56:36
9	A. So, yeah. If we go back to the	20:56:41
10	previous -- the previous testimony I gave on this,	20:56:43
11	the Taggable Friend API returned a list of the	20:56:47
12	user's -- a list of the authorized user's friends	20:56:51
13	that were taggable in the application.	20:56:58
14	The amount of data that these APIs	20:57:00
15	returned was very, very limited. In the case of	20:57:03
16	the Taggable Friend API, for example, the amount of	20:57:09
17	data emitted was the name, a URL to a person's	20:57:13
18	profile picture, and a token which could be passed	20:57:17
19	back to the API to tag them in a post.	20:57:21
20	That was the extent of the information	20:57:24
21	available via those APIs -- via the Taggable	20:57:26
22	Friends API, in my recollection.	20:57:30
23	Q. And you say it's limited information, but	20:57:33
24	it is still fairly described as "friends data."	20:57:36
25	Right?	20:57:39

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1	A. It is some information about a friend or a	20:57:40
2	list of friends.	20:57:45
3	But I would draw a distinction between	20:57:47
4	that and the friend permissions, which gated a very	20:57:50
5	different set of information.	20:57:55
6	Q. And we might need to blow it up a bit, but	20:57:59
7	I'm interested in the Social Context API here, and	20:58:02
8	I'll read it:	20:58:07
9	███████████████████████ ████	
■	████████████████████████ ████	
■	████████████████ ██████ ████	
■	██████████████████████ ████	
■	█████████████████████ ████	
■	████████████████ ████	
■	██████████████████ ████	
16	Did I more or less read that sentence	20:58:32
17	accurately?	20:58:34
18	A. You more or less read it accurately.	20:58:35
19	Q. And what is an "endpoint"?	20:58:37
20	A. An "endpoint" is another word to describe	20:58:42
21	an API. It's a -- it's a -- a term used to	20:58:47
22	describe an API that a developer could call.	20:58:54
23	Q. And so using this example of the -- the	20:59:02
24	movie ID context endpoint, it says:	20:59:07
25	"For example, you might be able to answer	20:59:12

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1	the question, 'Which of my friend have	20:59:13
2	watched this movie?'"	20:59:16
3	So, technically, how would that app be	20:59:17
4	able to answer that question with the Social	20:59:20
5	Context API?	20:59:22
6	A. As I talked about earlier, the precise way	20:59:26
7	that the Social Context API worked is not something	20:59:30
8	I am very familiar with. In fact, I am not even	20:59:35
9	sure exactly when it existed and how it behaved.	20:59:41
10	So, I think, like, details on exactly how	20:59:48
11	the Social Context API worked, like, I don't think	20:59:50
12	I can give a clear answer to.	20:59:53
13	MR. LOESER: Mr. Cross, I'm noting for the	21:00:00
14	record that I believe it is now 9:00 P.M. your	21:00:02
15	time. Is that correct?	21:00:04
16	THE WITNESS: It is. But I'm happy to do	21:00:05
17	15 or 20 more minutes if that -- if that would help	21:00:08
18	us get through stuff.	21:00:11
19	If now is a convenient time to break for	21:00:13
20	you, let's break. But if there was a convenient	21:00:15
21	time to break for you that's 10, 15-minutes away,	21:00:17
22	these -- let's do that. I don't want to --	21:00:21
23	MR. LOESER: Okay. I appreciate your	21:00:24
24	flexibility, and I'll keep going, and we'll pretty	21:00:27
25	quickly get through those 15 minutes. And that	21:00:31

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1	would probably be a good time in where I am to stop	21:00:34
2	anyway. So --	21:00:37
3	THE WITNESS: Cool. Let's do that.	21:00:38
4	BY MR. LOESER:	21:00:39
5	Q. And, I should say, in order to go further,	21:00:39
6	it would take a lot longer than 15 minutes. So in	21:00:41
7	light of the schedule you have, I think that's a	21:00:44
8	good time to stop.	21:00:46
9	A. Okay. Great.	21:00:47
10	Q. Okay. This is a broad question, and we	21:00:48
11	can start big and go small.	21:00:52
12	But how did Facebook determine what apps	21:00:54
13	to whitelist for friend -- for providing access to	21:00:56
14	friend data?	21:01:03
15	A. Again, to clarify, what do you mean by	21:01:07
16	"friend data"?	21:01:09
17	Do you mean the friends permissions?	21:01:11
18	Q. I mean information about users who are not	21:01:14
19	the users of the app.	21:01:16
20	So whatever information made available via	21:01:19
21	the -- the permission to access the friends -- you	21:01:22
22	know, I'm going to garble the terminology every	21:01:30
23	time I try and do it.	21:01:33
24	But there's an API that grants -- that	21:01:35
25	provides, technically, access to friends	21:01:37

1	information about the app's users.	21:01:39
2	And I'm interested in understanding when	21:01:41
3	Facebook put an app on a whitelist so that it	21:01:43
4	continued to access the data of a user's friends,	21:01:46
5	how it made that decision.	21:01:48
6	A. Okay. So --	21:01:50
7	Q. And let me make it even easier for you.	21:01:52
8	The time period I'm interested in is in	21:01:55
9	the transition from Graph API Version 1 to	21:01:58
10	Version 2.	21:02:00
11	A. Okay. So let me -- let me -- let me try	21:02:01
12	and play back some -- some context, I think, is	21:02:07
13	important to the answer here.	21:02:10
14	So, first of all, as you have kind of	21:02:15
15	defined "friends data" and we've discussed it	21:02:20
16	earlier in this testimony, like, there are APIs	21:02:24
17	that were available publicly in Version 2 that	21:02:31
18	would have emitted some limited amount of	21:02:36
19	information about an app using users' friends.	21:02:40
20	For example, their comments on my photos	21:02:45
21	or limited information about them in order to	21:02:48
22	render a taggable -- a "tagging" user type ahead,	21:02:51
23	for example.	21:03:01
24	So, in this context, let me play back to	21:03:01
25	you -- I want to make sure I'm understanding your	21:03:04

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1	question correctly.	21:03:06
2	You are specifically referring to	21:03:09
3	permissions or behaviors that were no longer	21:03:10
4	available in Version 2 of the API, and you're	21:03:14
5	interested in applications that continued to have	21:03:17
6	access to the behaviors in API Version 1 after they	21:03:22
7	were no longer available to a nonwhitelisted	21:03:28
8	developer.	21:03:31
9	Do I have that correct?	21:03:32
10	Q. Correct.	21:03:34
11	A. Okay. Cool.	21:03:34
12	So having talked to people, the -- the --	21:03:42
13	my understanding of how these decisions were -- how	21:03:48
14	these discussions happened is that there were a	21:03:54
15	number of developers who had been unable to update	21:03:58
16	their apps in time for the public API deprecation,	21:04:05
17	or that they -- that their use case -- they	21:04:11
18	required more time to migrate than was available	21:04:14
19	to -- to regular developers.	21:04:17
20	And so there were conversations had about	21:04:20
21	whether or not some of these applications should be	21:04:23
22	granted additional time to -- to migrate from the	21:04:27
23	API Version 1 behavior to the standard API	21:04:34
24	Version 2 behavior.	21:04:37
25	Q. And were any other considerations relied	21:04:40

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1	on by Facebook when determining whether to	21:04:47
2	whitelist an app?	21:04:49
3	A. Again, can we -- specifically for --	21:04:53
4	for -- continued access to the API of V1 behavior	21:04:56
5	and permissions associated with API V1?	21:05:02
6	Q. Right.	21:05:06
7	A. My understanding was that the rationale	21:05:12
8	was based on whether or not the user experience	21:05:15
9	would be broken if the deprecation timeline was	21:05:17
10	followed or whether or not there would be other	21:05:23
11	risks for the developer of the deprecation being	21:05:28
12	enforced on the general time frame.	21:05:34
13	So those -- primarily, it was about	21:05:38
14	developers needing more time to migrate because, if	21:05:42
15	they -- if the enforcement and deprecations	21:05:45
16	happened on that publicly available timeline, there	21:05:49
17	would be negative impacts primarily for the user	21:05:52
18	experience of the people using the app --	21:05:54
19	Q. And you -- sorry. Go ahead.	21:05:57
20	A. No, go on.	21:05:59
21	Q. You mentioned other risks for the	21:06:02
22	developer.	21:06:04
23	What were the other risks?	21:06:04
24	A. So one I recall was that there was an	21:06:07
25	application providing compliance services to people	21:06:17

1	in the financial and insurance industry, and their	21:06:21
2	customers would -- were still using their	21:06:25
3	application in a certain way, and they needed more	21:06:31
4	time to train their customers to not use the	21:06:34
5	application in a certain way because the	21:06:39
6	functionality they were relying upon would become	21:06:44
7	unavailable when the API deprecations were applied	21:06:47
8	to them.	21:06:54
9	Q. And what you described were considerations	21:06:56
10	taken into account vis-à-vis developers.	21:07:01
11	But were there different considerations	21:07:05
12	taken into account on whether to grant Facebook	21:07:06
13	partners with continued access to publicly	21:07:10
14	deprecated permissions?	21:07:13
15	A. Sorry. Say that again?	21:07:17
16	Q. So you indicated that the -- the -- there	21:07:20
17	was extensions provided so apps could migrate to	21:07:23
18	the new platform, and you spoke about that for a	21:07:26
19	minute.	21:07:31
20	But I'm wondering if there were other	21:07:31
21	considerations that were taken into account when	21:07:33
22	discussing partners in particular and whether they	21:07:35
23	should be provided continued access to publicly	21:07:39
24	deprecated permissions.	21:07:42
25	A. My understanding is that there were some	21:07:46

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1	contractual agreements that specified a longer	21:07:48
2	deprecation window than was available to -- than	21:07:54
3	was offered to regular developers; and, as such,	21:07:58
4	it's possible that some of the extensions to the	21:08:04
5	deprecations were granted on that basis.	21:08:11
6	Q. And were there any other bases that	21:08:14
7	Facebook had for providing continued access to	21:08:17
8	publicly deprecated permissions to partners?	21:08:20
9	A. Can you define again what you mean by	21:08:24
10	"partners" here? 'Cause all partners are	21:08:25
11	developers in this context.	21:08:28
12	Q. I mean the entities that have been	21:08:31
13	described by Facebook as "integration partners"	21:08:33
14	or -- there are a variety of other categories of	21:08:36
15	partner that Facebook uses. In fact, looking at	21:08:41
16	your notes, you have "integration partners,	21:08:44
17	business integrations, media integrations, search	21:08:47
18	integrations."	21:08:49
19	So with regard to any of those categories,	21:08:51
20	were there other considerations taken into account	21:08:54
21	by Facebook when deciding whether to provide	21:08:57
22	continued access to the publicly deprecated	21:09:00
23	permissions?	21:09:02
24	A. So I think what's important to understand	21:09:04
25	here is that -- let's take integration partners,	21:09:06

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1	for example.	21:09:10
2	They had -- they had always had access to	21:09:11
3	some permission -- some APIs that were not	21:09:16
4	available to regular developers because they were	21:09:22
5	rebuilding a Facebook replacement client experience	21:09:24
6	on their devices.	21:09:28
7	So "integration partners" as has been, you	21:09:30
8	know, defined in the -- in the documents, were	21:09:35
9	already on several whitelists in order to provide	21:09:38
10	the experience that they offered to users.	21:09:46
11	So that's my understanding of how	21:09:54
12	integration partners continued to have access to	21:09:56
13	the -- the private APIs and behaviors they had	21:10:00
14	always had access to that were not available to	21:10:04
15	regular developers.	21:10:07
16	Q. Okay. And, again, I want to make sure I'm	21:10:09
17	using the right terminology, and I'm talking about	21:10:13
18	continued access to friend data.	21:10:16
19	So you've just described the continued	21:10:17
20	access that integration partners had to friend	21:10:19
21	data.	21:10:22
22	Were there considerations that Facebook	21:10:22
23	took into account when deciding whether the other	21:10:24
24	types of partners that we just went through had	21:10:26
25	continued access to friend data?	21:10:29

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1	A. My understanding from talking to the	21:10:35
2	people involved in this at the time, plus my own	21:10:37
3	experience, is that the extensions granted to	21:10:40
4	applications to access API Version 1 and the friend	21:10:46
5	permissions was limited to cases where the user	21:10:51
6	experience would be significantly degraded if they	21:10:54
7	weren't given extra time or there was some form of	21:10:57
8	legal and regulatory risk to the partner if the	21:11:02
9	extension was not granted for a period of time.	21:11:05
10	But remember that there -- you know, there	21:11:09
11	were other reasons to -- there were other	21:11:11
12	deprecations and changes in the API behavior that	21:11:15
13	were not related to the deprecation of the friend	21:11:18
14	permissions. I think that's really important to	21:11:20
15	understand.	21:11:22
16	Q. Right. And I perhaps led us astray with	21:11:23
17	the terminology I was using.	21:11:26
18	And, really, what I'm asking -- and you	21:11:28
19	can tell me if it changes any of your answers --	21:11:30
20	but I'm looking for the reasons Facebook had to	21:11:33
21	provide continued access to friend data by anyone	21:11:36
22	after the transition to Version 2.	21:11:39
23	And we've talked about apps, and we've	21:11:41
24	talked about business partner -- or integration	21:11:43
25	partners and business integrations.	21:11:47

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1	And so just more broadly put, have you	21:11:51
2	given me the full list of reasons that Facebook	21:11:53
3	used when deciding whether to provide continued	21:11:58
4	access to friend data after the transition to	21:12:00
5	Version 2?	21:12:06
6	A. So I provided -- friend data in	21:12:08
7	Version 2 -- like, again, I think it's important to	21:12:13
8	separate these things. Right?	21:12:20
9	You're asking a compound question that's,	21:12:23
10	like, somewhat impossible to answer with -- given	21:12:25
11	your definition of "friend data" and given the	21:12:30
12	variety of different applications we're talking	21:12:32
13	about here and the complexity of the whitelists --	21:12:35
14	the various whitelists that these apps were on.	21:12:37
15	So, like, I think your question is hard to	21:12:41
16	answer in -- in simple terms given your definition	21:12:44
17	of "friend data."	21:12:49
18	Q. And you're saying that because my	21:12:53
19	definition includes the types of data that's	21:12:54
20	provided with regard to APIs other than the friends	21:12:58
21	permissions specifically and includes groups and	21:13:02
22	events and social context and all of that, or is	21:13:04
23	there some other complication?	21:13:08
24	A. That's primarily the complication. Like,	21:13:10
25	integration partners, the primary use case there is	21:13:12

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1	that these are experiences that are designed to	21:13:21
2	replicate the Facebook experience on another mobile	21:13:29
3	device platform, set-top box, or so on.	21:13:33
4	And those folks would have access to --	21:13:39
5	always had access to information that wasn't	21:13:45
6	available via the -- via the standard APIs. So	21:13:46
7	that's one class of things.	21:13:51
8	Then there is the general deprecation --	21:13:56
9	the general changes -- the whole package of changes	21:14:01
10	from Version 1 to Version 2, which included the	21:14:04
11	deprecation of the friend permissions, a number of	21:14:07
12	other changes, including app-scoped user IDs and so	21:14:10
13	on.	21:14:15
14	So in terms of granting extensions to the	21:14:15
15	API Version 1 to Version 2 transition, from talking	21:14:20
16	about all of -- from talking to all of the people	21:14:24
17	involved to the -- as many people as I could that	21:14:26
18	were involved at the time, the rationale for	21:14:29
19	granting an extension is that it was a belief that	21:14:33
20	the user experience would be severely degraded if	21:14:37
21	the app wasn't given extra time to migrate from API	21:14:44
22	Version 1 to Version 2.	21:14:48
23	Regular developers had a year. There were	21:14:51
24	some applications, it was determined, that would --	21:14:54
25	would provide a broken user experience if they	21:14:57

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1	weren't given more time to upgrade.	21:14:59
2	And that was the determination based on,	21:15:03
3	again, speaking to the people involved, the	21:15:06
4	degradation in the user experience that would	21:15:08
5	result, or whether or not there was risk around,	21:15:10
6	like, legal and regulatory use of the Platform that	21:15:17
7	required extra time to unwind.	21:15:23
8	That's my understanding of the -- the	21:15:27
9	reasons why some applications were granted	21:15:29
10	additional time to migrate from Version 1 to	21:15:33
11	Version 2.	21:15:36
12	Q. And so those are all of the reasons that	21:15:38
13	Facebook had for providing continued access to	21:15:40
14	friend data for apps and partners after the	21:15:45
15	transition to Version 2.	21:15:51
16	MR. BLUME: Objection to form.	21:15:54
17	THE WITNESS: The answer I just gave was	21:15:55
18	in -- in two parts.	21:15:58
19	Part one is: Integration partners who had	21:16:01
20	built experiences that were on unusual devices,	21:16:06
21	operating systems, and set-top boxes and so on that	21:16:13
22	required, in order to function, always, permissions	21:16:16
23	which -- APIs that were not generally available.	21:16:22
24	The use of those APIs and permissions was	21:16:31
25	governed by contracts, typically. That's what	21:16:34

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1	determined an integration partner, and they were	21:16:37
2	considered as operating on a different set of	21:16:40
3	permissions and APIs than the public API surface	21:16:46
4	area.	21:16:51
5	The second part of your question was	21:16:51
6	determining extensions to Version-- the Version 1	21:16:53
7	to Version 2 deprecation timeline where Version 1	21:16:57
8	included friends permissions and Version 2 did not	21:17:01
9	include the friends permissions.	21:17:06
10	And my understanding from talking to the	21:17:08
11	people involved is that the reason for granting	21:17:11
12	extensions to the standard Version 1 deprecation	21:17:14
13	window was to do with degradation of the user	21:17:17
14	experience and/or a few cases where the use of the	21:17:21
15	API was involved in compliance use cases.	21:17:30
16	I -- it's possible that there are other	21:17:35
17	reasons, but having talked to people and reviewed	21:17:38
18	the documents in this case, it's consistent with	21:17:43
19	that understanding as -- as referring to the friend	21:17:46
20	permissions deprecations.	21:17:48
21	BY MR. LOESER:	21:17:52
22	Q. And, again, I just want to -- trying to	21:17:52
23	make a record and make the record clear, and I'm	21:17:54
24	trying to understand every type of entity -- call	21:17:57
25	it a partner, call it a developer, call it an	21:18:01

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1	app -- that continued to have access to friend data	21:18:04
2	after the transition from Version 1 to Version 2.	21:18:07
3	And you have described a couple different	21:18:10
4	types of entities. You've described apps and	21:18:12
5	business integrations, and you've described	21:18:15
6	extensions that were provided to some; and for	21:18:19
7	integrations, access that existed before and	21:18:23
8	existed after.	21:18:26
9	And what I'm trying to pin down is, is	21:18:27
10	there any other category of third party that	21:18:30
11	continued to have access to friend data after the	21:18:36
12	transition to Version 2?	21:18:39
13	Are there any other reasons that Facebook	21:18:42
14	had for providing continued access to those	21:18:46
15	categories?	21:18:48
16	MR. BLUME: Objection. Form.	21:18:49
17	THE WITNESS: So I -- it -- I think	21:18:53
18	we're -- you're mixing up here the friend	21:18:55
19	permissions, right, and the permissions that were	21:18:59
20	used in the API to govern access to the data	21:19:02
21	exposed via those permissions from friends data in	21:19:07
22	the more general sense that you defined it earlier	21:19:13
23	in this -- when we discussed earlier in this	21:19:17
24	testimony.	21:19:20
25	Like, it's -- I'm --	21:19:20

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1	BY MR. LOESER:	21:19:23
2	Q. Let's go back. Let me make it easier.	21:19:23
3	Let's put that aside for a moment, the	21:19:25
4	other APIs that are not categorized as friend	21:19:27
5	permissions, and just talk about friends; the APIs	21:19:30
6	that were on that list that were deprecated.	21:19:34
7	Other than the -- the third parties you've	21:19:37
8	already described, are there any other categories	21:19:40
9	of partner or developer or third party at all that	21:19:42
10	had continued access to those permissions after the	21:19:48
11	transition?	21:19:52
12	And if so -- let's stop with that. Let's	21:19:53
13	start with that half of the question.	21:19:58
14	A. Okay. So my understanding is that the	21:20:01
15	ability of applications to request the friend	21:20:04
16	permissions from users, which is, again, how this	21:20:08
17	works, right? We're talking specifically about the	21:20:11
18	friend permissions. These are things that apps	21:20:14
19	could request users to grant to the application.	21:20:17
20	My understanding is that the reasons for	21:20:22
21	continuing to allow apps to request the friend	21:20:26
22	permissions from users was limited to applications	21:20:31
23	that needed additional time to -- to migrate.	21:20:38
24	The -- and we've gone through the reasons for that.	21:20:42
25	Q. Okay. And there's -- and you also	21:20:50

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1	described business integrations, and you gave the	21:20:52
2	reason for that.	21:20:54
3	And I just want to make sure that there's	21:20:55
4	not any other category of partner, according to	21:20:58
5	Facebook, that continued to have access to those	21:21:00
6	permissions that were whitelisted.	21:21:03
7	A. So when apps were whitelisted -- if an app	21:21:08
8	was whitelisted to continue to have access to	21:21:12
9	Version 1, then it could continue to request those	21:21:15
10	permissions from some users.	21:21:18
11	So by being granted an exception -- an	21:21:21
12	extension to the deprecation timeline window,	21:21:25
13	applications that were whitelisted to continue to	21:21:30
14	have access to Version 1 could continue to access	21:21:33
15	the friend -- could continue to request the friends	21:21:37
16	permissions from users until that access was -- was	21:21:39
17	removed.	21:21:43
18	And my understanding is that the reason	21:21:45
19	for that was to give those apps extra time to	21:21:50
20	migrate to prevent degradation to the user	21:21:54
21	experience.	21:21:58
22	There are apps on -- I've been through the	21:22:00
23	list of applications that were granted an	21:22:03
24	extension, and a good example of that -- an	21:22:05
25	application in that category was, like, the -- an	21:22:14

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1	integration with car manufacturers and their head	21:22:18
2	unit so you could access some kind of Facebook	21:22:22
3	experience inside your car.	21:22:25
4	It's very hard to update the software on	21:22:27
5	those devices, and they needed more time.	21:22:29
6	So that's my understanding of, like, the	21:22:37
7	reason why extensions were granted; to give more --	21:22:40
8	developers more time to upgrade, given the changes	21:22:44
9	in the API that would affect them -- not just the	21:22:47
10	friends permissions, but other changes between	21:22:50
11	Version 1 and Version 2, and that's why the	21:22:53
12	extensions were granted.	21:22:57
13	Q. I'm not trying to get you to repeat the	21:23:04
14	same testimony. I am simply trying to make sure	21:23:06
15	that we've exhausted Facebook's reasons for	21:23:09
16	whitelisting and the categories of apps or partners	21:23:12
17	that were whitelisted.	21:23:16
18	And so there's nothing else to add to that	21:23:18
19	from Facebook's perspective?	21:23:20
20	A. So the -- in terms of, like, whitelisting	21:23:24
21	extensions to Version 1, there are other reasons	21:23:27
22	why an app might be whitelisted, but that's	21:23:33
23	generally not to do with their use of the friend	21:23:37
24	permissions.	21:23:39
25	Q. Was it something to do with their use of	21:23:42

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1	other deprecated permissions?	21:23:44
2	A. Other changes in behavior from Version 1	21:23:47
3	to Version 2. For example, app-scoped user IDs.	21:23:49
4	Big change to how the Facebook Developer Platform	21:23:55
5	operated. As I say, there's a whole number of	21:23:58
6	changes between Version 1 and Version 2.	21:24:02
7	Your question was about friends	21:24:04
8	permissions, and there are other reasons why some	21:24:06
9	apps were granted an extension. And my	21:24:09
10	understanding is that, you know, the reasons for	21:24:12
11	granting an extension to the friend permissions is	21:24:16
12	because of a user experience degradation and	21:24:19
13	striking a balance of giving more time -- those	21:24:23
14	developers more time to update their use of the	21:24:26
15	Platform or cases where the use of the Platform was	21:24:29
16	related to -- where the friend permissions were	21:24:33
17	used in the context of, like, regulated industries.	21:24:39
18	As I say, there are a number of developers	21:24:44
19	also whitelisted for continued access to Version 1	21:24:46
20	because of their use of other -- because of	21:24:50
21	their -- because of them being affected by other	21:24:53
22	changes in the API between Version 1 and Version 2.	21:24:55
23	MR. LOESER: Okay. Mr. Cross, we're at	21:25:07
24	now 9:25 your time, and I want to be sensitive to	21:25:09
25	your schedule.	21:25:12

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1	So we're more than happy to keep going,	21:25:13
2	but if you want to stop, it's getting late for you.	21:25:16
3	So --	21:25:19
4	THE WITNESS: Yeah, now is a good time. I	21:25:19
5	can feel my voice going, and this stuff is	21:25:21
6	important to get right. So I think it's a good	21:25:24
7	moment to pause and then come back and continue on	21:25:27
8	Thursday.	21:25:30
9	MR. LOESER: Okay. Well, thank you for	21:25:31
10	your time this evening, and we'll start again on	21:25:33
11	Thursday.	21:25:35
12	THE VIDEO OPERATOR: And we're off the	21:25:38
13	record. It's 9:25 P.M.	21:25:39
14	(Time noted, 9:25 P.M. London Daylight	21:25:41
15	Time)	21:25:43
16		
17	--o0o--	
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1   CERTIFICATE OF REPORTER

2   I, HOLLY THUMAN, a Certified Shorthand Reporter,

3   hereby certify that the witness in the foregoing

4   deposition was by me duly sworn to tell the truth, the

5   whole truth, and nothing but the truth in the

6   within-entitled cause; that said deposition was taken

7   down in shorthand by me, a disinterested person, at the

8   time and place therein stated; and that the testimony

9   of said witness was thereafter reduced to typewriting

10   by computer, to the best of my ability via remote

11   videoconferencing, under my direction and supervision;

12   That before completion of the deposition review of

13   the transcript [] was [X] was not requested/offered.

14   If requested, any changes made by the deponent (and

15   provided to the reporter) during the period allowed are

16   appended hereto.

17   I further certify that I am not of counsel or

18   attorney for either or any of the parties to the said

19   deposition, nor in any way interested in the event of

20   this cause, and that I am not related to any of the

21   parties thereto.

22

23   DATED: May 12, 2022

24   *Holly Thuman*

25   HOLLY THUMAN, CSR

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 1    IN RE: FACEBOOK, INC., CONSUMER PRIVACY USER PROFILE LITIGATION

 2    SIMON CROSS, JOB NO. 5210141

 3              E R R A T A   S H E E T

 4    PAGE 10    LINE 16    CHANGE "international" to "international travel"

 5    _____

 6    REASON misspoke

 7    PAGE 27    LINE 25    CHANGE "and are" to "and that are"

 8    _____

 9    REASON misspoke

10    PAGE 33    LINE 6    CHANGE "those" to "them"

11    _____

12    REASON misspoke

13    PAGE 36    LINE 12    CHANGE "a documentation" to "documentation"

14    _____

15    REASON transcription error

16    PAGE 43    LINE 15    CHANGE "It was" to "There were"

17    _____

18    REASON transcription error

19    PAGE 52    LINE 19    CHANGE _____

20      delete "Facebook-like or  - - Facebook-branded or"

21    REASON transcription error

22

23    _____        24th June 2022

24    WITNESS                             Date

25
```

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1   IN RE: FACEBOOK, INC., CONSUMER PRIVACY USER PROFILE LITIGATION

2   SIMON CROSS, JOB NO. 5210141

3   E R R A T A   S H E E T

4   PAGE 55____ LINE 2____ CHANGE "billing" to "building"

5   _____

6   REASON transcription error

7   PAGE 65____ LINE 7____ CHANGE "would refresh" to "to refresh"

8   _____

9   REASON transcription error

10   PAGE 79____ LINE 12____ CHANGE "138S" to "138X"

11   _____

12   REASON transcription error

13   PAGE 86____ LINE 15____ CHANGE "friend" to "friends"

14   _____

15   REASON misspoke

16   PAGE 94____ LINE 4____ CHANGE delete "also using the same app"

17   _____

18   REASON transcription error

19   PAGE 102____ LINE 9____ CHANGE "is the" to "of the"

20   _____

21   REASON transcription error

22

23   _____   24th June 2022____

24   WITNESS   Date

25

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1   IN RE: FACEBOOK, INC., CONSUMER PRIVACY USER PROFILE LITIGATION

2   SIMON CROSS, JOB NO. 5210141

3   E R R A T A   S H E E T

4   PAGE 127   LINE 5   CHANGE "functionality of the" to

5   "functionality the"

6   REASON transcription error

7   PAGE 146   LINE 18   CHANGE "he can" to "he can answer"

8   _____

9   REASON transcription error

10   PAGE 168   LINE 16   CHANGE "API 1" to "API V1"

11   _____

12   REASON transcription error

13   PAGE_____   LINE_____   CHANGE_____

14   _____

15   REASON_____

16   PAGE_____   LINE_____   CHANGE_____

17   _____

18   REASON_____

19   PAGE_____   LINE_____   CHANGE_____

20   _____

21   REASON_____

22

23   _____   24th June 2022

24   WITNESS   Date

25

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